

FROM SEA TO SKY

1910—1945

FROM SEA TO SKY

1910—1945

by

SIR ARTHUR LONGMORE

Air Chief Marshal



GEOFFREY BLES

52 DOUGHTY STREET, LONDON

ALL RIGHTS RESERVED
FIRST PUBLISHED IN 1946

Acc No.	28709
Class No	G10
Book N.	2312

THIS BOOK IS PRODUCED IN COMPLETE
CONFORMITY WITH THE AUTHORIZED
ECONOMY STANDARDS

THE ILLUSTRATIONS ARE
BOUND TOGETHER AT THE END
OF THE BOOK

MADE AND PRINTED BY
BUTLER AND TANNER LTD.
FROME AND LONDON

CONTENTS

I. EARLY FLYING DAYS	<i>page</i> 9
II. NAVAL FLYING	21
III. THE FIRST GREAT WAR (1914 AND 1915)	39
IV. THE BATTLE OF JUTLAND	53
V. BACK IN THE R.N.A.S.	64
VI. MALTA AND ITALY, 1918	72
VII. DEMOBILIZATION, RECONSTRUCTION AND A STAND-EASY	84
VIII. BULGARIA, GRANTHAM AND CAMBERLEY	91
IX. IRAQ, 1923 AND 1924	102
X. ANDOVER, AIR MINISTRY AND INLAND AREA (1925-9)	125
XI. CRANWELL (1930-2)	137
XII. INLAND AREA COMMAND	152
XIII. COASTAL COMMAND, 1934-6	163
XIV. THE IMPERIAL DEFENCE COLLEGE, SEPTEMBER 1936 TO DECEMBER 1938	175
XV. A MISSION TO AUSTRALIA AND NEW ZEALAND, 1939	190
XVI. TRAINING COMMAND IN WAR	207
XVII. MIDDLE EAST, 1940. MUSSOLINI BACKS HITLER	216
XVIII. ITALY ATTACKS GREECE. OUR WESTERN DESERT OFFENSIVE STARTS WELL	235
XIX. THE FLOOD TIDE OF VICTORY	248
XX. STORMY WEATHER	269
XXI. VARIOUS OCCASIONS	285
XXII. CANADA, WHITEHALL AND COWES	295

CHECKED

TO MY SON DICK

*Any profits to the Author will go to the Royal Air Force Benevolent Fund, after
providing a memorial book for Cranwell College*

FOREWORD

THESE Memoirs cover a period of thirty-five years. In deciding to publish them, I have been prompted by the thought that they may be of interest as a record of the development of Service flying from its earliest days.

The story of the first year of the War in the Middle East, as I saw it in 1940-1, is told in some detail.

It has been my good fortune to have spent my active career in two great Services. The Royal Navy measures its history and traditions in centuries. The Royal Air Force is not yet thirty years old but has already a wonderful record in two world wars.

I have purposely included some personal reminiscences in order to give an idea of the life we lived in the Services during the earlier part of the twentieth century.

A. L.



CHAPTER I

EARLY FLYING DAYS

"SAILOR, I can give you another hunt on Tuesday if you care to stay over the week-end." So said my host, Major "Jorrock's" Jackson of North Cheriton, as we rode home together on a November evening of 1910 after a good Saturday with the Blackmore Vale hounds. I opened my mouth to accept and then I remembered: was it not on Monday next there was to be that lecture on flying at Shcerness Naval Sub-Depot and had I not half made up my mind to hand in my name as a volunteer for flying? The forms to do so were to be circulated during the lecture and the opportunity would be a fleeting one.

My cavalry friend laughed at my hesitation: how could flying compare with hunting as a sport and did I get so many days that I could afford to refuse the offer of a ride over the best country in the Blackmore Vale? Well, it didn't seem to matter much one way or the other, so I took a shilling out of my pocket—Heads I go back—Tails I stay and hunt. Heads it was and so I went back, little realizing how much that spin of the coin was to affect my future.

It was during 1910 that I became interested in flying: there had been an air meeting at Rheims in the autumn of 1909 and the flights of Henri and Maurice Farman and other French aviators had been fully recorded in *Flight*, one of the few periodicals dealing with the subject in those days. The *Daily Mail* had offered a prize, some years before, to the first aviator who should accomplish the journey between London and Manchester by air: another paper had offered a similar sum to the first man to swim the Atlantic and also for the first flight to Mars and back within a week.

In the spring of 1910 Grahame White and Paulhan, a famous French pilot, entered for this prize. They both flew Farman biplanes with 50 h.p. Gnome motors; Grahame White started at dawn on 23rd April, refuelled at Hillmorton and reached Whittington near Lichfield in good time, but soon afterwards near Tamworth his engine failed and he made a forced landing. The wind then got up and blew the machine over on its back and so damaged it that it was impossible to repair in time to complete the

flight within the stipulated 24 hours. Paulhan started on 27th April followed shortly afterwards by Grahame White in his repaired machine; the former had no engine failure and reached Burnage near Manchester soon after 5 a.m. on the 28th, having stopped the night at Lichfield. He thus won the race in spite of Grahame White's sporting effort to catch him up, which he attempted to do by starting from his night stop before dawn. It all made thrilling reading in the *Daily Mail*, and I started to learn what I could about this new sport from books and papers on the subject.

In the Island of Sheppey, Sheerness is at one end to the west and Leysdown at the other; it was on the lonely marshes of Leysdown that some British enthusiasts were engaged on their early attempts in 1910; in fact, Moore-Brabazon had made the first circular flight there on 30th October 1909 flying a Short biplane with a Green engine. It was a tragedy when C. S. Rolls was killed at the Bournemouth meeting on 12th July 1910; he had already flown across the Channel and back and was well known as the winner of an Isle of Man Tourist Trophy motor race in a car which bore his name. However, it is not my intention to record the history of the development of aviation but only those incidents which stimulated my interest in the early stages and those with which I was subsequently concerned in one way or another. Leysdown being within easy reach of Sheerness, where my torpedo boat was based, it was natural that I occasionally had the opportunity of seeing something of what was going on there.

Admiral Sir George Neville commanding the Reserve Fleet was living ashore at Admiralty House, Sheerness, during 1910, and without my knowing it at the time he was to have a very considerable influence on my future life. First of all, it was at his house that I first met the girl who was to be my wife three years later, and secondly, he was the main instigator in persuading the Admiralty to take an interest in flying. Marjorie Maitland was the Admiral's niece and was staying at Admiralty House when I was invited to dinner. I sat next to her and was doing very nicely with polite conversation when a salmon bone stuck end up in my jaw and refused to be removed by ordinary manipulation of the tongue. Being on my best behaviour I did not dare use a finger for the job and so suffered in silence, unable to eat anything more for the rest of dinner and almost incoherent in speech: it was not a successful début.

Sir George was one of the first Admirals to own a motor-car:

the story goes that he had an Oldsmobile in 1905 which he drove all the way up the Rock of Gibraltar. A team of bluejackets with drag ropes helped him to come down again, for the brakes of those days had their limitations. Unlike many senior officers of his time he was much interested in new developments, and in aviation he saw some future beyond that of pure sport. He it was who had arranged for the lecture on flying and for the names of those volunteering to be recorded.

By the time the lecture was over I had made up my mind and collected the necessary form to fill in. I recorded that I was not married nor even engaged: nor was I a specialist in gunnery, torpedo, navigation or anything which made me of particular value to the Navy: those who served in torpedo boats or destroyers were merely "salt-horse" and therefore expendable. I even undertook to pay for any damage I might cause to the aeroplane in the unlikely event of my being selected to learn to fly. Having signed on the dotted line, as did many others, I returned to my normal life as skipper of Torpedo Boat No. 111 and became immersed in the development of a recognition signal device on which I had made a start.

Very soon after this, towards the end of November 1910, I received an appointment in command of Torpedo Boat No. 24. I was delighted, for she was a brand-new twin-screw turbine boat with oil-fired boilers and at twenty-five years old one could be proud of such a command. We joined a sea-going flotilla of which the light cruiser *Diamond* was the leader and our Captain D (destroyers) was Captain Godfrey Paine, with whom I was, later, to be connected under very different circumstances.

We spent the winter at Chatham and I had hardly begun to experience the thrill of handling this fine boat before I was summoned on board the *Diamond* early in February 1911. I entered the presence and immediately became aware of a very turbulent atmosphere. "What's all this nonsense about your being selected for a flying 'course'?" said my Captain D. Then it dawned on me that the impossible had happened, and that the Admiralty had selected me as one of the four to be trained out of some 500 applicants. I had almost forgotten all about it in the excitement of commissioning my new boat and now I was faced with another dilemma, for my captain was a very forceful personality who left me in no doubt as to what he thought of the idea of one of his torpedo boat commanders leaving the fold for such a wild-cat enterprise. "Leave it to me, my boy, and we'll get it cancelled,"

and I must say it sounded like being the easiest way out. Then I remembered the shilling episode and I got obstinate. The painful interview eventually came to an end and I left the *Diamond* with my captain's parting words ringing in my ears to the effect that if I wanted to break my "perishing" neck, he supposed it was my business and not his. It looked almost as if I had spoilt a promising naval career. However, before the year was out Captain Godfrey Paine was himself learning to fly and had assumed command of the depot ship to which naval airmen were attached.

On 1st March 1911 the four officers selected for the flying course assembled at Eastchurch in the Island of Sheppey. The names of the others were Lieuts. Samson and Gregory, R.N., and Lieut. Gerrard of the Royal Marines. The Leysdown pioneers had moved their activities to Eastchurch a few months before and the works of Short Bros. were already in existence in their initial stage, immediately adjoining the large field which we called the aerodrome. It had a pond in the middle.

The arrangements for our training were to be as follows: Mr. Frank McClean (now Sir Frank McClean), acting through the Royal Aero Club, whose energetic Secretary Harold Perrin did much to help us, lent two of his Short biplanes for flying instruction. Mr. G. B. Cockburn, a private individual and already a pilot, offered his services free as an instructor; the running expenses and maintenance of the aircraft by Messrs. Short Bros. were to be paid for by the Admiralty.

This very generous gesture by the Royal Aero Club and by the two gentlemen concerned was very deeply appreciated by us, but it was not a system which could be accepted indefinitely. As a result of our repeated representations, the Admiralty agreed to purchase the aircraft required for our instruction, and to pay for their repairs as well as for the technical instruction which we received, principally from Mr. Horace Short. This aircraft pioneer was one of the most interesting characters I have ever met. Physically deformed, for he had an enormous head which gave him a grotesque appearance, he had been in all parts of the world in some engineering venture of one sort or another. In the small tin-roofed shanty which served as an officers' mess he would sit till the small hours, regaling us with stories of his various enterprises. As time went on we would get together and roughly draw out our ideas of the future aeroplane or seaplane. Already, at that early date, Short had designs out for a two-engined machine driving three airscrews and in the following year it was built and

actually flew, though not with very great success: we christened it "the triple dud."

During the many hours when wind or weather conditions prevented our flying we either worked on repairs in Short's workshops or received a sound basic training in aeronautical engineering and meteorology. Horace's brother Oswald was also of great help to us and it was with him that I worked out a scheme for fitting torpedo-shaped air bags to the wooden undercarriage skids of a biplane. In November of that year (1911) I landed, or more accurately splashed, on to the Medway with a machine so fitted and, strange to say, without any damage. It was towed ashore and after having wiped the spray off the engine I flew it off the beach of Grain Island back to its home at Eastchurch: but I am anticipating events and must retrace my steps back to March when the serious business of learning to fly was beginning.

There was no such thing as dual control in the Farman-type Short biplane with 50 h.p. Gnome rotary engine, into which I climbed sitting on a structure rather like a ladder behind my instructor, Cockburn. All I could do was to lean over his shoulder and lightly place my hand on top of the control lever to get the feel of what he was doing to take the machine off the ground, control it in the air and subsequently land it intact. As to steering, I could only watch what he was doing with his feet.

Eastchurch aerodrome was on a slope and in one direction the take-off was towards a dyke. On my second or third lesson, taking off downhill we failed to rise, charged the dyke and jumped right across it leaving the undercarriage behind. Neither of us was hurt, thanks to having been well strapped into our seats, and as our feet were already on the ground we merely walked back to report the damage, which, I think, took not much more than a week to repair.

Towards the end of March (1911) an Aero Show was held at Olympia at which I spent some hours in company with my colleagues from Eastchurch. It was most interesting as there were a number of new types over from France which were obviously far in advance of the "bird-cages" on which we were learning. Most of them had their engines in front and these we called Tractors as distinct from our Pushers, which had their engines mounted behind the planes. Those that particularly took our fancy were the 70 h.p. Gnome Blériot Monoplane with two seats side by side, the Bréguet tractor biplane and the Nieuport monoplane, which was the ancestor of the type that was to prove so successful

in 1915-16. Cody's biplane, very large and made of bamboo, overshadowed all the other exhibits in size, and there was Cody himself very much like "Buffalo Bill," though not actually the one so named, surrounded by youths, explaining the points of his cathedral-like machine. Incidentally, it did fly quite reasonably well, though I don't think anyone quite knew why. A Cody very similar to this 1911 exhibit actually won the Military Trials the following year.

By the end of March, after some two and a half hours of dual instruction, I was permitted to go solo. The great moment had arrived and after two or three straight flights just off the ground to get the hang of the steering I set off cautiously on a wide circuit and landed safe and sound somewhere in the vicinity of the spot pointed out to me beforehand. What a mental relief and how pleased I was with myself.

Our flying routine would seem curious to present-day pupils, for we started at dawn in order to get calm wind conditions; if it was blowing more than 10 m.p.h. we did not fly; it just was not done, for landing was difficult and undercarriages not so accommodating as now. If the wind dropped in the evening, as it usually did, we got in an hour or two then. It was therefore not until the 24th April that Samson and I were deemed experienced enough to fly the necessary tests for the Royal Aero Club Aviators Certificate. These consisted of three tests: (a) Two flights in a figure of eight round posts 500 metres apart; (b) attainment of an altitude of 50 metres; (c) two landings with motor stopped, the machine to come to rest within a distance of 50 metres from a point to be indicated to the pilot. Samson was called upon to do his test first and I watched him with great anxiety, hoping he would not crash the one aeroplane at that time available to us, and consequently prevent me from competing: however, all was well and we both succeeded. He was granted Certificate No. 71, and mine being No. 72. These certificates were issued under the authority of the "Fédération Aéronautique Internationale" by the Aero Club of the country concerned, and I was the seventy-second Britisher to qualify as a pilot. On the certificate was written in English, French, Spanish, Italian, German and Russian: "The Civil, Naval and Military authorities, including the Police, are respectfully requested to aid and assist the holder of this certificate." I was very proud of myself that evening when it was all over, barely five months since I spun that coin which decided my future for me and just over six years since a Cingalese fortune

teller at Colombo had told me I should join some new service but he could not say what it was going to be.

In May we began to get many visitors out from Sheerness and even from much further afield. On a calm evening there was much activity, for not only were the four of us flying regularly but Maurice Egerton, Ogilvie, Professor Huntingdon, Jezzi, Dunne, and Frank McClean were all active with various types of aircraft of which perhaps the Dunne tail-less V-shaped monoplane was the most peculiar.

I took up my first passenger on 4th May, an intrepid lady, Mrs. Assheton Harbord, who was a keen free balloonist. I thought she was very brave and I was tactless enough to mention it to my mother when I returned that evening to my house. She was most annoyed that she hadn't been the first to have had that privilege. The matter was rectified next day and I took her for a flight which she didn't like very much, "too draughty," as she put it, for we were still completely unprotected from the wind except by what we wore.

One day I met a bumble-bee heading due south whilst I was flying due north and he hit me on the forehead with some force. It was time we got some sort of windscreen, and we had not long to wait, for the enterprising Horace Short altered the control position and seated both pilot and passenger in a nacelle shaped like a small boat with windscreen in front. He produced this modification in the next biplane which the Admiralty bought for us, but he still retained his old design with the front elevator, the engine behind the main plane and the tail boom outriggers which carried the tail, rear elevator and rudder.

By this time Prince Louis of Battenberg had succeeded Admiral Neville at Sheerness and both he and the Princess were frequent visitors to Eastchurch. On one of his visits early in May I took his thirteen-stone flag lieutenant, James Pison, up for a flight, but I notice from my flying log book that we didn't climb very high. On another occasion I had the honour of taking Princess Louise, later Crown Princess of Sweden, for a flight. One of the others took up her lady-in-waiting, Miss Kerr.

I think it was on that particular day that the Admiral's party were entertained to lunch in our small officers' mess, which by this time had a cook of sorts and a marine batman as steward. There was a horrible pause before lunch whilst Gregory and the marine held whispered conversation; the soup was to be iced soup on account of the hot day but it just would not behave, tepid one

minute, a solid block of ice the next. Later, all went well till the coffee stage, when we searched for an Egyptian cigarette which we knew the Princess smoked; eventually one was found and it was handed to her on a tray. We had all taken to smoking Virginian cigarettes principally because the stronger brand did not seem to suit us in the early hours of the morning. Hitherto no self-respecting naval officer would have thought of smoking "stinkers," and it took a great war to change the fashion, probably for a similar reason to the one which influenced us.

As ground crew and handling party we had a collection of bluejackets and marines who took to their strange duties with great energy and zest, but I regret to say there were moments when their enthusiasm took a form which was distinctly embarrassing. They were very short of the necessary tools for aircraft and engine maintenance and so they decided to make up this deficiency from the smart cars which brought some of our rich friends to see the flying. They had a most effective technique, which consisted of inviting the chauffeur to see round the sheds whilst another rascal rifled the tool-box of the victim. It worked well till one day they made a mistake and tried it on with an Admiral's car, with very embarrassing results.

At Hendon a flying demonstration took place in May at which I saw Hamel perform in his Blériot monoplane. He was regarded as one of the most finished pilots of the day and he certainly handled his Blériot most beautifully. Others who took part were Grahame White who took up my uncle, Sir Archie Murray; Cody, who arrived from Aldershot in his large biplane, and Anthony Drexel, who crashed in his Blériot through having his elevator wires crossed during assembly but was unhurt.

In June the four of us decided we must go further afield in our flights than just round the Isle of Sheppey, so we selected Brooklands as the first objective. Samson and Gregory were to fly our two Short biplanes over there and Gerrard and I were to bring them back. On the first suitable morning Samson started but something went wrong with the other machine and so Gregory did not get away. Gerrard and I followed in a car with a mechanic and a small supply of such spares as we thought might be required on this momentous cross-country flight of some fifty miles. Samson had one forced landing and broke a wire, which we repaired, after which there was no holding him for he overshot Brooklands and landed on Hawthorn Hill racecourse. He came back to Brooklands next day safe and sound, and with the machine intact, in time

to attend the motor racing which was going very strong at that time.

As Gerrard had some eye trouble, it fell to me to fly the machine back to Eastchurch, which I proceeded to do on the first fine morning. Incidentally we had discovered that the aviators at Brooklands were flying in much stronger winds than we were accustomed to go up in, a discovery which made us much more weatherproof and enterprising in future.

When in the vicinity of Redhill my engine began to show signs of failing, so I landed on Walton Heath golf links, coming to rest on the fifteenth green. Out rushed the Secretary of the Club to find out what damage had been done to the green, but finding none he then asked whether he could assist me. It was only a choked petrol jet which did not take long to fix, after which I drilled him how to switch the engine on and off whilst I started the propeller, ran under the plane and changed places with him. It was rather a hazardous performance but it worked and I got away safely and eventually landed at Eastchurch in time for a late breakfast. In my record of this flight I noted that I was equipped as follows: a leather flying suit borrowed from Maurice Egerton, a wrist-watch on left wrist, an aneroid altimeter strapped to my right arm, map case strapped to my legs; the only instruments provided in the machine were a compass and an oil pressure indicator.

The Gordon Bennett International speed race took place at Eastchurch on the 1st July (1911) round a closed circuit. It was won easily by a Frenchman, Weymann, in a Nieuport monoplane; Hamel, the favourite, in a clipped-wing Blériot, had crashed early on in the race without damage to himself. Ogilvie, in a Wright-type biplane, was one of the few Britishers competing but his machine was very slow in comparison with the Nieuport. This monoplane took our fancy so much that Samson persuaded the Admiralty to send Gerrard to Pau in France to learn to fly one of the type, and some months later he duly set about learning the Nieuport technique of using his feet for lateral control instead of for steering and the control lever not only as an elevator but also to steer with. In fact, he had to unlearn the method he had just got used to. Unfortunately, by the time he had done so and had taken delivery of one of this type, the ban on monoplane flying had been imposed by both Admiralty and War Office as a result of a series of fatal accidents.

One of the big International air races took place in August

and as the surviving competitors were due to land near Dover at a landing-ground up on the Downs, the latter was selected for our next cross-country venture. This time we took two Short biplanes of the same sort as those on which we had been trained, and duly arrived after a very pleasant evening flight in lovely weather over the garden of England. The continental competitors had not arrived, so we were requested to put up some sort of show for the small and patient crowd that had assembled to catch a glimpse of the famous pair of Frenchmen who were running neck and neck in all the big races of the year.

Their names were de Conneau, who flew a 50 Gnome Blériot under the *nom de plume* of Beaumont, and Védrines with his 50 Gnome Morane monoplane, much the same as the Blériot but slightly faster. The former was a French naval officer, a very good navigator, and Védrines frequently resorted to the trick of following him till near the control landing-ground, when with his faster machine, he would overtake and pass him to land just a few minutes to the good. Védrines had won the Paris-Madrid race and de Conneau by the end of the year had to his credit Paris-Rome, Paris-Brussels-London-Paris and Circuit of Britain, with Védrines as runner-up on each occasion. These two airmen were quite outstanding and made our early efforts seem most insignificant, which perhaps was just as well, as an aviator with a swollen head is not a good life and will soon cost his friends a wreath. From actual experience, having done the trip an hour or so before in a car, I know that de Conneau must have flown blind in the mists covering the Cumberland moors on the section of his flight between Carlisle and Manchester during the Circuit of Britain. De Conneau faded out of aviation not very long afterwards, but Védrines kept going and flew in the 1914 war, though by then fresh French champions of the air had been starred and little was heard of his exploits. Incidentally Védrines could give a very graphic description of his fight with an eagle during his flight over the Pyrenees in the Paris-Madrid race, in which, he alleged, the bird actually attacked him in the cockpit of his Morane.

On the 1st of September the four of us had completed the stipulated six months' flying training for which we had been appointed to H.M.S. *Actæon* (supernumerary) and as no news had reached us from the Admiralty to say what our future was to be, I was deputed by Samson, who was the senior, to go and find out. The particular Senior Naval Officer at the Admiralty who dealt

with our appointments as lieutenants did not seem to know much about us but supposed that, now we had had our bit of fun, we would be resuming our more serious duties in the orthodox Navy that went to sea in ships. I mildly pointed out that as we had been trained and were sufficiently expert to train others it was unlikely that Mr. Cockburn, our instructor, would be willing to spare another six months to do what we could perfectly well do ourselves. Evidently my enquiries had some effect, for after fourteen days' leave, which I spent in Scotland, I returned to Eastchurch to find that four more officers had been selected and that we were to train them.

Early in October I went to France to attend the Concours d'Aviation Militaire held at Rheims, for which twenty-five machines had been entered, all French. They had to be two- or more seaters, capable of landing and getting off within a certain distance with full load, and the speed course was over a distance of 300 kilometres. There were the usual collection of Maurice and Henri Farmans, larger and with higher-powered engines than the Short version which we flew, but what impressed me most was the team of three Bréguets of very advanced design. They were entirely made of steel, except for fabric surfaces, the engine was in front with cowling over it, wings folded for easy transportation, dual control was fitted and the tail unit was articulated with one universal joint; it looked most unsafe but evidently worked. Engine power had risen from the 50 and 60 h.p. up to 100 and 140. Other types included Voisin, Antoinette, a Paulhan triplane, Morane, Henriot, Déperdussin, and Nieuport. The final result had not been announced before I left but I think I am right in recording that the reliable old 70 h.p. Renault-engined Maurice Farman won the Concours with the highest aggregate total of marks for all tests.

Before returning to England I visited the Gnome engine works, and those of the Blériot and Déperdussin aircraft firms in addition to various flying schools, most of them operating at Mourmelon. From what I had seen it was clear to me that France was a long way ahead of us in the general development of aviation and in production of aircraft; a lead which she held right up to the war period, for it was not till early 1916 that, with our Sopwiths, Bristols, de Havillands and Handley Pages, we began to catch up both in design and production. Since then we have more than held our own in technical development. In the French Army manoeuvres in September 1911 a total of forty-four aircraft of ten

FROM SEA TO SKY

different types had taken part in addition to five airships. Germany was developing the airship and the new Zeppelin-designed ships were putting up fine performances in speed and endurance; perhaps for that reason she was not pushing ahead with the aeroplane as fast as France.

CHAPTER II

NAVAL FLYING

BY the end of October 1911, our flying education was sufficiently complete to turn our attention seriously to the business of applying the new science to the needs of the Navy. I have already described my contribution with the successful alighting on the water of a Short biplane fitted with air bags strapped to the undercarriage. What was to prove of far-reaching importance was the experiment carried out by Lieut.-Commander Samson in January of 1912. This consisted of flying an ordinary Short biplane fitted with air bags off a runway structure erected above the fore gun turret on the forecastle of H.M.S. *Africa*, which the Admiralty had authorized to be used for the purpose. The first test was done while the ship was at anchor in Sheerness harbour, and in May of 1912 the performance was repeated off H.M.S. *Hibernia*, a similar-class battleship to the *Africa*, whilst she was steaming at 15 knots.

Meanwhile, in America, various seaplanes had begun to appear and in England Commander Oliver Swann, a naval officer engaged on the construction of H.M. airship *Mayfly* at Barrow-in-Furness, was experimenting with an Avro floatplane. At Lake Windermere work was also in progress, in which Mr. Wakefield and Gnosspelius were prominent, the former with a single-float pusher biplane and the latter with a single-float monoplane; both machines had steadying wing-tip air-bag floats. I went up there in January and flew the Wakefield machine, this being my first flight in a floatplane off the water, a very thrilling experience.

Mr. Mortimer Singer, who was taking a great interest in aviation, offered two prizes, each of £500, one to the naval flyers and one to those of the Army, for the longest distance flown round a closed circuit before 31st March 1912. I competed on March 11th and managed to cover just over 180 miles before the sparking plugs of my Gnome engine began to oil up one by one and I could not maintain sufficient height to carry on. I had stayed in the air for three hours and fifteen minutes, covering 181 miles, which won me the naval prize.

I have previously referred to Captain Godfrey Paine, who had been so sparing with his blessing when I left his flotilla to take up flying, and to the fact that he was now captain of the depot ship

Acteon to which we were attached. It was with him that I attended the hydro-aeroplane meeting held at Monte Carlo in March 1912. The Admiralty had been invited to send representatives and were therefore to pay all our expenses.

Godfrey Paine was not one who was content with anything but the best, and so we travelled by the Blue Train to Monte Carlo and stayed at one of the best hotels for the week we were there. The hydro-aeroplanes, as they were called, were of various types and about a dozen of them were competing; most of them were ordinary land aircraft with floats in place of the wheeled under-carriages. The tests included rough-water landing (so-called) and take off, beaching to test the strength of the floats, in addition to speed and endurance flights. As passengers had to be carried, I offered my services to Fischer, the pilot of a Henri Farman, an ordinary-type pusher-type biplane with a 50 h.p. Gnome engine and a pair of most insecurely mounted floats. The weather was fine with a calm sea and we survived the various tests but did not win the competition in which the more modern designed American Curtiss flying-boat did very well.

Monte Carlo was very gay in that season of 1912, and we were honorary members of the International Sporting Club, where all the beauty and fashion assembled, the ladies of various sorts sparkling with diamonds. All the gaming tables were crowded and, for one glorious half-hour, fortune smiled at my roulette venture to the tune of some twenty real golden five-louis plaques, which made a handsome pile before they began to dwindle. Still, I kept enough to more than cover the expenses of some hectic evenings. A small bronze paper-weight which still adorns my writing-desk has, on one side, some rather well-developed ladies basking in the sun, and on the other an inscription which reads as follows: "Monaco 1912, Premier Meeting des Aéroplanes Marins organisé par l'International Sporting Club, M. le lieutenant A. M. Longmore délégué officiel de l'Amirauté anglaise." My travelling claim on the Admiralty amounted to some £70, which included the rail and boat return fare, *plus* my hotel bill and incidental expenses. It was some time before the department concerned at the Admiralty agreed to pay this altogether unprecedented claim, but they eventually did so. I have been to Monte Carlo since then on one or two occasions, but, in comparison with 1912, it seemed to me that its glory had departed and that it was living on its past reputation. From what I had seen of the hydro-aeroplanes at this meeting, I felt it was going to be some considerable time before

they could operate off the open sea and that sheltered water would be essential for take off and alighting.

Back at Eastchurch, the first of the new monoplanes ordered by the Admiralty had been delivered, a French 70 h.p. Gnome Déperdussin, and, to my great satisfaction, I was detailed as its pilot. The control was somewhat different from the Short and consisted of a wheel mounted on an inverted U bridge of laminated wood, which was hinged at the bottom. Rotating the wheel worked the lateral control, pushing or pulling the wheel actuated the elevator, steering by foot rudder bar was normal. I soon got used to the new arrangement as well as to the higher speed, both in the air and on landing, but I was disappointed in the reliability of the new model Gnome engine which, twice within a short period, let me in for a "dead-engine" forced landing. Each cylinder had one valve only and if it failed to close at the right moment, the exploded charge could flash back into the crude carburettor, with the result that a small flame would appear in the immediate vicinity of my knees. Then the petrol tap had to be turned off quickly and one was committed to a forced landing. The first time it chose to do this was when I was over the top of Margate at 2000 feet on a fine spring morning, admiring the view, when bang went one of the valves and I had to think quickly. Luckily I was high enough to reach an open field in the outskirts of Westgate and landed without damage in a half-grown cornfield.

In May of 1912, H.M. King George V came to Weymouth in the Royal Yacht *Victoria and Albert* to see the naval exercises which were to take place. It was at this review that Samson flew the Short off the *Hibernia* whilst she was steaming 15 knots and subsequently landed at the small landing-ground, which I and one or two others were using, at the east end of Weymouth Bay near the beach. I had flown my Déperdussin out to meet the Royal Yacht and on my return had met a patch of sea fog so prevalent in May; I flew blind for some minutes by compass and nearly ran straight into the cliff near Lulworth Cove. I followed the top edge of the cliff back the few miles to the landing-ground, which, incidentally, was so small that some years later I saw it and could not imagine how we had managed to fly out of it at all. The Press announced that it seemed at last as if the Navy had awakened to the fact that aeroplanes and perhaps hydro-aeroplanes might be of some use to the Fleet, and, as in the case of the submarine, we had allowed the French to do all the spade-work. It was unfortunate for Gregory and Gerrard that the two other

monoplanes which had been ordered were not delivered in time for the Review, and both these officers had to content themselves with flying what were by now the antiquated Shorts. One of these monoplanes was to have been the Austrian Etrich fitted with 120 h.p. Austro-Daimler water-cooled engine, a type which we had seen at the start of the *Daily Mail* £10,000 prize Circuit of Britain race on July 1st of the previous year. In many respects, it was very similar in shape to the German Taube with the Mercedes Benz engine which figured so prominently in the early stages of the 1914-18 war. The other monoplane missing was Gerrard's Nieuport, which had not arrived.

In April of 1912, the Committee of Imperial Defence had recommended a combined Royal Flying Corps which was to consist of a Naval and a Military Wing, and this actually came into being, on paper, on May 13th. In that month the Central Flying School opened at Upavon on Salisbury Plain for the training of officers of the two wings and it was staffed by officers and men in khaki and dark blue. The first Commandant was to be a naval one, and for this post Captain Godfrey Paine was selected with myself as one of the four flying instructors, the others being Captain Fulton and Major Jack Salmond from the military wing, and Major E. L. Gerrard, Royal Marines, from the naval wing. A naval engineer officer, Lieut.-Commander Randall, looked after the technical side and an army doctor, Lithgow, the medical service. The site for this flying school, on some training gallops above the village of Upavon, was ideal for the purpose at that time, for landings were possible over a very wide tract of country. Accommodation for living, messing and ground instruction was provided in wooden huts by the Royal Engineers and was quite comfortable. Each of the four flying instructors had a flight which varied in strength from three to six aircraft according to the crash rate. Fulton had some very neat 50 Gnome Avros, Salmond a few "bloaters," a type designed and produced by the Government factory at Farnborough and powered by a 50 Gnome; Gerrard had Henri Farman's which, by this time, had protection for the pilot and passenger in an open nacelle and had discarded the front elevator altogether. I had the confidential and reliable Maurice Farman with its air-cooled 70 h.p. Renault engine, but it still retained its front elevator, from which it derived the name of "Longhorn." Later, when this was discarded, the type became known as the "Shorthorn."

Our first batch of pupils consisted of those enthusiasts from

the Army who had already spent their £75 learning to fly sufficiently to obtain the Royal Aero Club certificate; these merely required conversion training to the types in use at the C.F.S. and subsequently as much practice as it was possible to arrange with our very limited number of aircraft. In addition to these soldiers, there were naval officers who had to start from the beginning. The ground crews in my flight were mostly sailors or marines and for senior mechanic I had a first-class naval E.R.A. (engine-room artificer) named O'Connor, whom I had brought on with me from Eastchurch. It was from a small nucleus of such highly skilled men as O'Connor that the R.N.A.S. in the 1914-18 war was able to expand its technical personnel.

I started with two Longhorn Maurice Farman and some eight or nine pupils, amongst whom was Major Hugh Trenchard and Lieut. Shepherd; the latter had been with me in torpedo boats. Trenchard was rather big for the passenger seat of my Maurice Farman. Perched up on the petrol tank behind the pilot he added considerable head resistance and slowed the machine down, but he was all right when in the pilot's seat properly streamlined within the nacelle. It was my flight which started the experiment of training the naval petty officer and army N.C.O. to fly. I see from my records that, out of a total of twelve, nine qualified for the Royal Aero Club certificate, which tends to prove that it was not really very difficult to learn to fly sufficiently to pass the necessary tests which were at that time laid down.

It was about this time that there was a very bad run of luck with monoplanes though not at the C.F.S., for we had only my Déperdussin, which was not being used for instruction. A very fine Guards officer pilot, Loraine of No. 3 Squadron R.F.C. commanded by Major Brooke Popham, was killed in a Nieuport on Salisbury Plain and two or three others on another type. This led to a ban on all monoplanes for some time: it set back this modern development a year or so, and deprived the Royal Flying Corps of full participation in the army manoeuvres. These manoeuvres took place in East Anglia at the beginning of September of this year (1912). Debarred from taking my Dep monoplane, I took a Longhorn instead, and Trenchard came as my observer. We flew via Port Meadow at Oxford and Hardwick, near Cambridge, to Thetford, reporting to the R.F.C. Commander, Major Burke, who was in charge of the six or seven aircraft operating with the Northern Army. A similar number had joined the Southern Army and were under the command of Major Brooke-Popham.

The types included French Bréguets with Canton Unné 120 h.p. water-cooled engines, Henri and Maurice Farmans, Avros and "Bloaters." The weather was good and both sides obtained excellent air reconnaissance reports from start to finish during the four days the operations lasted. On the first morning at dawn we found the enemy's detraining centre and his direction of advance, which my observer, Trenchard, reported immediately to the Army Commander after we had landed. The latter said it was splendid but how was the information to be communicated to his Cavalry Commander who, by this time, was some miles down the crowded Thetford-Newmarket road. We volunteered to deliver whatever order the C.-in-C. wished conveyed. We did so by a process of flying, at the lowest speed possible, down the main road about 100 feet up, looking for some red-tabbed officers on good horses which would denote Allenby and his staff, and we eventually located them. I landed in a stubble field alongside the road and Trenchard handed him the message less than an hour from the time the enemy had been located. Getting out of that field, however, I slightly chipped the airscrew on one of those stick erections which gamekeepers use to stop poachers dragging their nets across a field. Luckily my ground organization was equal to the occasion, for I had a spare airscrew strapped to my private car. The latter was an old chain-driven 45 h.p. open Daimler, which carried my ground crew, consisting of E.R.A. O'Connor and my driver, Parker, plus a few selected spares.

On one day we flew for over six hours on tactical reconnaissances, landing and taking off from any of those big grass or stubble fields to be found in that part of the country. On the last landing I broke a longeron, one of the four which carried the tail structure. We found the nearest blacksmith, blew up his fire, and during the night O'Connor made a metal sleeve with which we fixed that longeron. The old Longhorn was once again serviceable by dawn the next day. The battle ended near Little Thurloe; air reconnaissance for the Army had established itself and we were all very pleased as we set off on our return flights.

This was the first time I had done concentrated flying over a period of consecutive days and it was interesting to me to analyse my psychological reactions. Immediately on my return to Upavon, very early in the morning, I had hardly stepped out of the aeroplane before I felt a strong desire to get into a fast car and career round Salisbury Plain. I found a reasonable excuse for so doing,

as one of the small army airships, which had been due to take part in the army manoeuvres, had got into trouble and had effected a mooring in the shelter of a wood about ten miles away. So off I went at full speed and assisted to make her secure, until the necessary repair had been done to enable her to fly back to Farnborough. I found it difficult to sit down and concentrate on any serious reading, a sort of restlessness which persisted when I was not actually flying. My analysis, at that early stage, proved of use to me on many occasions later on when in positions of greater responsibility I recognized the symptoms in pilots or observers. A few days' leave or a change of operation would save a highly-strung, but valuable, pilot from "cracking."

Army aircraft trials took place at Larkhill, not far from Upavon, during the autumn. Though, on points, the actual winner was Cody's large biplane, with a water-cooled engine, it was the new de Havilland—designed B.E. with a 70 h.p. Renault engine—which was considered the most practical type for army reconnaissance. At this meeting I saw, for the first time, a totally enclosed Avro which was demonstrated by a naval lieutenant, Park, but it was too blind for military purposes and the pilot had difficulty in landing it. There were numerous R.F.C. Military Wing pilots, either taking part or looking on, and some of them, by this time, had donned the new double-breasted tunic with high collar known as the maternity jacket.

More Maurice Farman Longhorns and a fresh lot of pupils arrived in January 1913 and Major Trenchard became second-in-command to Captain Godfrey Paine. I found myself instructing Captain W. G. Salmond, brother of John, and, like the latter, destined to reach high rank in the R.A.F. A naval lieutenant, Ross, whom I had instructed *ab initio*, caused me a long and tedious walk one morning under the following circumstances. In order to do the first solo free from the distraction of other aircraft, it was my practice to fly the victim over to Netheravon about four miles away and send him off on a circuit with instructions to land near me. Ross duly took off, but disappeared in the direction of Upavon and as he did not return there was nothing left for me to do but walk back in fur coat and flying cap. I arrived eventually very hot, to find him at breakfast in the mess having forgotten all about me. My sense of humour nearly failed me but, in future, I was careful to be very emphatic in my briefing of first soloists.

On April 23rd, 1913, St. George's Day, I was married to Marjorie Maitland at St. Peter's, Eaton Square, my best man

being Major Hugh Trenchard. The reception afterwards was held at my father-in-law's London house, 18 Lennox Gardens, and our honeymoon was spent at Minehead, where it rained practically the whole ten days we were there. We returned to Upavon but it was not long before I was on the move once again. I had completed a most interesting year at the Central Flying School, during which I had got to know many of the officers of the R.F.C., who were later to reach high rank in their own service and subsequently in the R.A.F.

On May 7th I was appointed to H.M.S. *Hermes* for command of Cromarty Air Station. This cruiser had now become the parent ship of all the Navy that flew, other than those at the Central Flying School. She was commanded by Captain G. W. Vivian and carried a few seaplanes in a hangar erected on her quarter-deck. Incidentally, the Admiralty never took very seriously to the idea of the "Royal Flying Corps Naval Wing" which they interpreted as only applicable to the Central Flying School. A parallel system of training was still going on at Eastchurch for naval officers.

It is also of interest to recall that, for some months, political arguments had been going on in the House of Commons and in the Press between Colonel Seely, Secretary of State for War, and Mr. Joynson-Hicks, M.P., as to the actual number of aircraft in service in the Royal Flying Corps. The former claimed 120 but Joynson-Hicks contended that the figure was much less. Actually, the R.F.C. put into the field, for the army manœuvres in the following September, two dirigible airships and forty-five aeroplanes, which was about the same number as France had operated in their army manœuvres two years before.

Cromarty Air Station in May 1913 existed only on paper and first of all a site had to be found where hangars could be erected on a foreshore suitable for seaplanes to be hauled up or launched on their trolleys. This I found on a small patch of ground immediately adjoining Cromarty Coastguard Station on the south side of the Firth and just inside the entrance. Ownership of it was in doubt as between General Ross of Cromarty and the local fishermen who had dried their nets on that particular patch since time immemorial. Since we were to be there only for the summer, the problem was solved by asking the permission of both parties.

In due course, the portable Bessonneau hangars arrived by lighter, towed all the way from Sheerness, and we began the task of erecting these latest-pattern French aeroplane hangars, which

consisted of a wooden framework bolted together with a canvas covering. This particular pattern of tent could hold four or five aircraft of that period and the type continued in use at home and abroad for some twenty-seven years.

Early in July, the floatplanes began to arrive by rail or ship and the work of erecting them was done by the Company's mechanics who came with them. They were assisted by the twenty sailor ratings who had been allotted as handling party and ground crew: only half of them had ever seen an aeroplane before. Two officer pilots, Lieuts. Oliver and Ross, completed the party.

The first machine to be erected was a Maurice Farman Short-horn with a 100 h.p. Renault air-cooled engine. This floatplane was the same type as the one which had competed successfully at Monaco the year before: it had a pair of short broad pontoon floats which were actually sprung on rubber shock-absorbers. Later a two-float Sopwith tractor biplane arrived: it had a 100 h.p. radial air-cooled Anzani engine. The third machine was a French Borel monoplane on two floats with an 80 h.p. rotary Gnome engine.

With these three seaplanes we took every opportunity of exercising with the Navy that came to Invergordon in Cromarty Firth. During some Fleet exercises in the Moray Firth I was up on reconnaissance over by Nairn and was lucky enough to spot the periscope feather of a submarine, which my observer duly reported to the nearest ship by means of a crude daylight signal lamp. Our effort at air co-operation was sufficiently promising for the Navy to accept the fact that aircraft working with the Fleet might well be a development of the future. Just as in 1912 air reconnaissance had been sold to the Army as a result of the manœuvres, I have always regarded 1913 as the year when the Navy began to be interested.

We had many visitors from the Fleet to our little station down by Cromarty village. One afternoon Admiral Jellicoe walked in and showed great interest. He asked me whether I could just ferry him out to his flagship: I knew what he wanted but hadn't said, so off we went in the Borel. I gave the engine full throttle, took off and flew him round his Fleet, landing him safely close to his ship: a boat collected a very delighted Admiral and nothing was said as to my having exceeded his instructions. Admiral Colville was another whom I took for a flight, and there were many others of less-exalted rank.

When the Admiralty yacht *Enchantress* arrived we flew out to

escort her into harbour. She had on board the First Lord of the Admiralty, Mr. Winston Churchill; Colonel Seely, taking a holiday after his wrangle with Joynson-Hicks; Mr. and Mrs. Asquith and a few other distinguished people.

Winston was a constant visitor to our station: he had already been flown by Lieut. Spencer Grey at Calshot Air Station and it was not long before I had taken him up in the Borel and Maurice Farman. I can well recollect our flight in the Borel: it was one of those perfect autumn evenings and from 5,000 feet we had the most beautiful view right across the hills and mountains of Scotland with their wonderful colour effects. We both enjoyed it immensely. Winston was anxious to know what we young enthusiasts thought about the development of flying as it would affect naval warfare. An afternoon walk was usually the occasion for a discussion of this sort, but for me it was a breath-taking business because he invariably walked at least a mile an hour faster than my normal cruising speed. Jack Seely (later Lord Mottistone) was another enthusiast who came up with me once or twice.

I was invited to one or two meals on board the *Enchantress*, always an interesting occasion, for it was worth a lot to hear these brilliant people discussing affairs of the world. Sometimes on political subjects they even got quite worked up and I can well remember a spirited encounter of wits between Mrs. Asquith and Winston. Clever thrust and parry at lightning speed eventually led to an appeal to Mr. Asquith for his judgment on the question at issue. I certainly thought he had been asleep during the discussion but in a few wonderfully chosen words he disposed of the subject, and some other topic was introduced.

It was hard work keeping our three seaplanes serviceable: small things were continually going wrong with them as a result of faulty design. For instance, the metal control lever of the Borel broke in two as I was taking this machine off the water, though luckily for me not during flight. The skilled E.R.A. mechanics and naval shipwrights, or "Chippy-chaps," as we called them, were seldom at a loss to improvise some repair which enabled the machine to take the air again.

At the end of August the Battle Cruiser Squadron arrived, led by Vice-Admiral Sir David Beatty in H.M.S. *Lion*, and this was my first view of this magnificent ship of which I was destined to see something more three years later. With the permission of her captain, Ernle Chatfield, our mechanics used her fine workshops occasionally for small repairs.

Whilst at Cromarty, my wife and I lived at Dunskaith on the north side of the entrance near the village of Nigg; this meant a motor-boat crossing to the seaplane station the other side. Early one morning I was going across in a small motor-boat at a time when some cruisers were entering harbour, and, rather than wait until the long stream of them had all passed, I nipped in astern of the leading ship.

About an hour or so later I received from the flagship *Shannon* a peremptory signal to "repair on board at 9 a.m." This meant nothing less than the prospect of a distressing interview with Admiral Doveton Sturdee, for which the rig was frockcoat and sword. Thus attired, I climbed into the Maurice Farman and flew up to Invergordon, at the other end of the Firth, alighted astern of the *Shannon*, taxied up and secured the nose of the Maurice to the stern-rope ladder, up which I clambered.

As I reached the level of the sternwalk, I saw the Admiral's face peering at me through a porthole, and on reaching the quarter-deck I had a most icy reception by the officer of the watch and Flag Lieutenant, who ushered me below to the precincts of the Admiral's cabin. I was shown into the holy of holies to be greeted with a cheery smile, a handshake and congratulations on my novel method of answering his signal.

We had an interesting talk about seaplanes and their potential value to the Navy before the Admiral remembered that he had sent for me to explain the enormity of my crime in cutting in between the lines of his cruiser squadron that very morning. I apologized profusely and we parted most amicably; he even came on deck to see my departure, which went quite well except that in opening the engine full out to take off abreast the ship my best new cap flew off and was cut to bits by the airscrew.

This famous Admiral revenged the loss of the *Good Hope* and *Monmouth* by his spectacular victory at the Battle of the Falkland Islands on December 8th, 1914, when with the battle cruisers *Invincible* and *Inflexible* and the cruisers *Kent*, *Glasgow* and *Cornwall*, he defeated Von Spee and sank the *Gneisenau*, *Scharnhorst*, *Nürnberg* and *Leipzig*. I was to see the Admiral once more, in 1922, after he had retired, when he recalled the incident at Cromarty.

My parent ship, the *Hermes*, paid a visit to Cromarty early in September, and as she came into harbour a small Caudron amphibian biplane flew off the platform on her forecastle and was later housed at the seaplane station. The pilot was Bowhill (later Air Chief Marshal Sir Frederick Bowhill, C.-in-C. Trans-

Captain Godfrey Paine, Commandant of the C.F.S.; Captain M. P. Sueter; Commander F. R. Scarlett, Inspecting Captain of Aircraft; Commander O. Swann, Assistant Director Air Department; Commander E. A. Masterman (for airships), and the following qualified pilots: Commander C. R. Samson, Lieut. R. Gregory, Major R. Gordon, Royal Marines, Lieut. Spencer Grey and myself.

Proceedings opened by a statement from the Fourth Sea Lord to the effect that there appeared some lack of definition at present as to the functions of the naval wing and that the time had come for it to pass from an experimental stage to take a definite place in the naval organization. Discussion took place on various training problems and on my special enlistment scheme, but what is important to record is that this conference marks the date (November 1913) when the Royal Naval Air Service virtually came into being and as a separate organization to the Royal Flying Corps, although the official date was, I believe, July 14th 1914.

A quota of naval pilots still went to the Central Flying School for training, but Eastchurch continued to function separately; moreover, supply orders for all naval aircraft, service or training, were placed by the Admiralty.

A Naval Aircraft Allocation List, dated January 1914, showed a total of 120 aeroplanes and seaplanes distributed between the following aeroplane or seaplane stations: Eastchurch, Isle of Grain, Yarmouth, Calshot, Felixstowe, Fort George and Firth of Forth. The list of machines by types included many of those I have already mentioned, together with Short seaplanes, fitted with either 160 h.p. or 100 h.p. Gnome rotary engines. It will thus be seen that once the Admiralty had accepted the future possibilities of the air there was no delay in building up the new service as fast as existing circumstances permitted.

On January 15th (1914) I took over command of Calshot Air Station from Lieut. Spencer Grey. As an experimental station it was not well situated from the secrecy point of view, being on a spit of land below the Castle at the entrance to Southampton water with its aircraft in full view of every steamer that called at the port. Also it was not convenient for the personnel, who were housed across the water at Warsash coastguard station on the mainland and had to cross backwards and forwards by motor-boat. It was not till long afterwards, and as a wartime necessity, that accommodation was built close to the station itself.

I found my work intensely interesting and there were an excellent lot of officers and men, all imbued with the same enthusiasm. Lieut. Bigsworth was my second-in-command; Lieut. Edmunds looked after the administration in addition to his flying duties, and other pilots included Travers, a direct entry, Lieut. Cresswell, a Marine; Lieut. Chambers, who had been with me in torpedo boats, and Lieut. Ross from Cromarty. As our experiments included gunnery and torpedo work, we had two specialists, Lieut. Hyde-Thomson (T) and Lieut. Clarke Hall (G).

We still needed reasonably calm weather and water for our experimental flying, so that January, February and March did not produce any very interesting results, except for submarine visibility exercises during which we discovered that the 'wash "feather" made by a periscope could be seen at some distance from the air in calm water but that this was difficult in rough water. Only under the most ideal conditions, and certainly not in home waters, could a submarine be located when submerged below periscope depth.

During one of his visits to Portsmouth in February, the First Lord, Mr. Winston Churchill, wanted to see this for himself. He accordingly sent a signal to me at Calshot to say he would like a seaplane "alongside" the *Enchantress* at 10 a.m. next morning. I flew over in a Maurice Farman and alighted in Portsmouth harbour, which was already very congested. The old *Victory*, at that time, was moored out in the harbour, and her long bowsprit, masts and yards provided plenty of hazards for taking off and landing a 1914 seaplane; moreover, that particular First Lord was very precious and already questions had been asked in the House of Commons as to whether he was wise in risking his neck so frequently.

We got away safely and found the submarine not far from the Nab Light vessel and it then proceeded to submerge to different depths, with the results I have already recorded.

I saw a particularly smart bit of work by Mr. Tom Sopwith and his mechanics when his small racing seaplane built with a single central float crashed with a loud splash at the entrance to the Hamble River one evening in February or March (1914). It was hauled out of the river, put straight on to a lorry, taken back to Kingston where the float was cut in half and made into a two-float job. The machine was repaired, a new engine fitted, and within a month it had won the first Schneider Trophy race at Monaco with Mr. Pixton as pilot.

From the earliest flying days there has always been a tendency towards exaggeration, whether in figures of performance claimed by the designers and producers of aircraft, or in their operational capacity by the enthusiastic users of them. At an experimental station it was our duty, as test pilots, to give accurate figures and to avoid over optimistic statements. In this respect we were handicapped by lack of up-to-date instruments, but we were very critical of some of the types that came to us for trial.

One of our Sopwith pusher seaplanes had a 1½-pounder gun, weighing 265 lb., mounted in the nose of the nacelle, with which Lieut. Clarke Hall, the gunnery officer, carried out many successful firing trials from the air. The only other aeroplane which carried a somewhat similar calibre gun was the French Voisin, which mounted a 37 millimetre; this weapon was used at the beginning of the 1914-18 war. On the introduction of the air-cooled machine gun, however, the idea of a larger calibre was dropped and was not re-introduced till many years later.

Trials with wireless telegraphy in sending and receiving from the air showed considerable promise and ranges of six to eight miles were being obtained by our telegraphists of the air. Day searchlight signalling was developed, and a German device in which the aircraft carried a reflector mirror was proving a satisfactory method until the Hun agent concerned came down and hurriedly reclaimed his Zeiss searchlight and reflector some time in July 1914.

Night flying with headlights was another activity, and in this Lieut. Travers got good results flying a Sopwith Bat boat, which was one of the original boat designs on the lines of the American Curtiss. This officer actually flew round the Fleet at night during the review in July and rather surprised the Navy in so doing.

It was inevitable that some crashes resulted from these tests of various machines and apparatus. Usually, owing to the very light wing loading of the wing surfaces compared with modern practice, the pilot and passenger were able to scramble out of the wreckage whilst it floated. However, it was a sad blow when we lost a very fine pilot, Lieut. Cresswell, and one of the cleverest torpedo officers in the Navy, Commander Rice, when the wings of a Wight seaplane folded up in the air.

On June 15th my air station was officially inspected by the Board of Admiralty, which included the First Lord, Mr. Churchill; the First Sea Lord, Prince Louis of Battenberg, and the Fourth Sea Lord. I subsequently received a letter of commendation

which was gratifying to me and to the ten officers and forty-two men who manned the station. We were now required to organize for the reception of all available seaplanes and their crews belonging to the R.N.A.S. in order that they might take part in the Naval Review to be held the following month.

This Review was unique in many respects and has been faithfully recorded by the historian, but it is of interest to airmen because it was the first, and as far as I know the only, occasion on which seaplanes were actually moored out in lines with the naval vessels. No less than eighteen took their place in the line and, in spite of our grave anxiety as to the watertightness of their floats, they all survived the ordeal. When the time came, they slipped their moorings, took off and flew round the Fleet.

At Calshot were assembled all those R.N.A.S. officers who were connected with seaplanes; in addition to those of us already at Calshot they included Captain F. R. Scarlett, who was in charge of the concentration, and the following officers (we had just adopted the new R.N.A.S. titles):—Squadron-Commanders Gordon, Clarke Hall, Risk and Seddon, and Flight Commanders John Babington, Rathbone, Oliver, Hewlett, Faussett, Barnby, Bowhill, Cull, Cave-Brown-Cave, Williamson, Kershaw, Sitwell, Fowler, Nansen, Brodribb, McKean, Busk and Reginald Bone, and, last but by no means least, Flt.-Sub.-Lieut. Lord Edward Grosvenor, the first of the special entries to come to Calshot. On the mainland at Eastney, near Portsmouth, were the remainder of the R.N.A.S. who were flying land machines, and these included Sq.-Commander Samson, Reggie Marix, R. Bell Davis, I. T. Courtney, R. Peirse and one or two others. Immediately afterwards the First Lord came to the station with a party which included Colonel Seely and Admiral Custance, and all seemed pleased.

It was on the occasion of this visit that the First Lord drew attention to the torpedo experiments we were conducting; he said he would like them speeded up. I told him that if I could retain a certain Short 160 Gnome seaplane, I would undertake within a short time to carry and successfully release a 14-inch torpedo which weighed some 900 pounds. The retention of the Short was agreed and on July 28th I succeeded in getting this machine off the water with the torpedo slung below and in launching it for its run. It all worked well but, of course, it was a "stunt."

No technical expert could pass the factor of safety of the machine so loaded, petrol was only sufficient for about half an

hour and there was no passenger carried. To think that large numbers of torpedo-carrying seaplanes could be immediately ordered as a result of this was nonsense. It is true that a Short seaplane nearly two years later, flown by Lieut. Edmunds, successfully torpedoed a Turkish transport in the Sea of Marmora, but it was not until 1917 that a reasonable aeroplane for the purpose was produced. However, this preliminary success was very encouraging to the torpedo expert, Flt.-Lieut Hyde Thomson, who had done such excellent work in adapting the torpedo for release from the air and in designing the torpedo carrier which fitted on the seaplane under the fuselage between the two floats.

During these strenuous months at this air station, my wife and I lived in a small house near the village of Warsash, and with a fine view of Southampton Water. It was here, on May 14th, that our first child was born, a daughter, and christened Janet. For various reasons I was not able to get away on leave at all, but we promised ourselves a real good autumn holiday in which we were to go yachting on the west coast of Scotland. Alas, we were to be disappointed as events were leading rapidly to the First Great World War.

On July 27th, an Admiralty signal stated that Prince Henry of Prussia would not visit Cowes as arranged and that all available service types of seaplanes were to be flown to various east coast stations. Most of these were despatched next day, after which the work of dismantling the extra portable hangers was begun. In the midst of all this activity a Sopwith seaplane arrived for test with a new type of 100 h.p. monosoupape Gnome, its speed was between 75 and 80 m.p.h. and it carried fuel for $3\frac{1}{2}$ hours.

On the evening of the 27th, a contingent of 50 Scots Fusiliers arrived for the defence of the Castle, and on Saturday, August 1st, we all moved over to the emergency accommodation at the air Station.

The Castle Yacht Club had for many years held their weekly class yacht races from Calshot and, indeed, it was their clubhouse on the Spit that we took over as an officers' mess. In return we allowed them to continue their racing, using the Castle as their control. It was, I think, on this Saturday, August 1st, that one of their distinguished old members said to me that it looked rather like war, to which I agreed, and then he added: "Do you think it will interfere with our racing?" I said I thought it might. It was not long before that old fellow

FROM SEA TO SKY

found his way to the Dover Patrol in a yacht taken over by the Admiralty, where he served his country nobly and forgot his yacht racing.

On August 3rd I flew the last remaining serviceable Short seaplane through to the Isle of Grain, calling *en route* in at Westgate, which had just been opened as a seaplane station. On August 4th there was little left to do at Calshot and the declaration of war was only a question of hours. I was invited that night to dine with Signor Marconi, whose house, Eaglehurst, was only a short walk from the air station. There also was Ned Grosvenor, who had become engaged to a very charming lady and was busy most of dinner trying to fix up for a parson to marry them as soon as possible. Marconi's mother was not the least disturbed by these comings and goings during dinner and nor was I, for it seemed likely that this was to be the last really good champagne dinner I was to get for some time and I was determined to make the most of it. Eventually the whole party went off parson-hunting, leaving me to entertain the old lady, who was most interesting about Italy and her life. I walked back to camp about midnight on the most perfect summer's night to find the signal had just been received—"War declared against Germany, report to Admiralty forthwith."

CHAPTER III

THE FIRST GREAT WAR (1914 AND 1915)

ON August 5th, at 7.30 a.m., I duly reported at the Admiralty, where I received instructions to accompany Major Gerrard and to requisition aircraft and engines from the various civil flying enterprises as well as those belonging to private individuals. We visited Brooklands and Hendon and purchased 3 Morane mono-planes, 1 Maurice Farman, 1 Henry Farman, 1 Sopwith single-seater, 1 Bristol, 3 Blériots and several engines. Next day we called at Eastbourne and Shoreham, but only collected 2 training type Henry Farmans and 2 Avros.

After this I returned to Calshot and went on with my work of testing new aircraft and delivering them to east coast air stations, from which patrols were already operating over the North Sea and Channel.

It was not long before pilots began to arrive for conversion training on seaplanes, and it was for this purpose that Calshot was principally used throughout the War and for many years afterwards. The experimental work gradually transferred itself to Felixstowe on account of the better facilities at that Station for handling big flying-boats.

On Friday, 25th September, I received from the Director of the Air Department, Admiralty (Captain Murray Sueter), the following signal: "You are to raise all the aeroplanes you can and fly to Dunkirk by Sunday. I give you a free hand to go to Hendon and Eastchurch and take any you like. Machines can either fly over or go by steamer. Acknowledge."

I carried out these instructions to the letter and reached Dunkirk by 3 p.m. on Sunday in an R.E.5. Designed and built by the Farnborough factory, it had an excellent 120 Austro-Daimler engine. I had with me six other aircraft and pilots, including Flt.-Lieut. Bigsworth from Calshot. Wing-Commander Samson was in command of the R.N.A.S. at Dunkirk with some twelve aircraft and a few hastily improvised armoured cars. The function of these armoured cars was not very clearly defined but they were doing excellent work providing some sort of cover to any advanced landing-fields. These were required for extended air reconnaissance work on this completely open left flank of the Allied armies

during the German drive to the south and before the race for the Channel ports had started. German Uhlan patrols had penetrated as far west as Popperinghe and, already, Samson's armoured cars had had one or two brushes with them, after which they were not so enterprising.

On the 30th September, I was sent off in my R.E.5 to raid Cambrai railway junction; my passenger, Flt.-Lieut. Osmond, being given two or three improvised French bombs which he threw over the side at a given signal from me. Not very accurate bombing, I fear, and I do not suppose it caused any inconvenience to the German troop movements, but it was the best we could do in the absence of proper bomb-carriers and sights, which were then only just being introduced into service.

To reach Cambrai with a low cloud base I pushed up through the overcast, and after five minutes inside cloud I emerged in bright sunlight right side up. I kept my course for some ten minutes, which I calculated would bring me out over the target, and came down through the murk right over it. This was my first experience of blind flying, and without proper instruments it was only possible in an almost automatically stable aircraft such as my R.E.5.

On the way back I landed at Douai to refuel, where also I found Chambers, who had been on a similar mission. In getting away we had great difficulty in starting his engine and only just managed it before dark; just as well we did, because the Germans took Douai that night.

Samson detailed me for duty in command of his base depot at St. Pol, adjoining Dunkirk, from which most of his aeroplanes were operating. Things were happening very quickly at this time and it was very difficult to get a clear picture of the situation which was developing from the east towards Brussels and Antwerp. Mr. Winston Churchill flashed through on his way to Antwerp, where the Marine Brigade had been sent as a last-minute reinforcement to the exhausted Belgian Army.

The various historians have recorded this hectic period in detail from the information which they were afterwards able to piece together, but at the time anyone, like myself, in a subordinate position was completely in the dark as to what was happening, except what could be guessed from movements in the immediate vicinity. London motor-buses arrived and departed full of marines in the direction of Antwerp on the 3rd October. Risk arrived with stories of an armoured car scrap near Lille in

which 8 Uhlans were accounted for. On the 4th more motor-buses appeared and departed.

Two naval brigades arrived and were despatched in improvised armoured trains. Our coastal reconnaissances for locating any German naval interference with transport movements continued with negative results; no German surface ship or submarine attacked our ships. All available naval aircraft were ordered to Antwerp, where some arrived. On the 7th they all arrived back and reported probable evacuation of the city.

On the 8th October, my birthday, all those with serviceable machines flew over to Ostend, including myself. I chased a German Taube but got nowhere near it; anyway, my pistol was a poor weapon to do it much damage. This German reconnaissance machine happened to pass over Ostend and Zeebrugge whilst the 7th Division and 3rd Cavalry Division were still disembarking. At Ostend on the 9th we heard of the fall of Antwerp and that Marix and Spencer Grey had bombed the Zeppelin shed at Düsseldorf successfully. From now on, our few aircraft were employed on reconnaissance work for General Rawlinson's 4th Corps; Major Becke with his R.F.C. Squadron arrived at our aerodrome on Ostend racecourse. Our combined reconnaissance confirmed that the German Army were nearing Lille.

On the 12th, Ostend became a seething mass of refugees and there were scenes of considerable confusion. It was becoming obvious that Ostend was not going to be held. I was detailed to pack up and take our ground personnel and equipment by motor transport to a landing-ground near Thourout. We had some stores and personnel at the Terminus Station at Ostend and I went there to collect them—no easy task with the congestion of refugees still trying to get away by rail. Having a last look round before leaving, I spotted some cases addressed to General Byng of the 3rd Cavalry Division: I rescued as many of them as I could cram into a lorry and hastily departed. Some time later the same evening, not having found General Byng, I opened one of the cases to see if they were worth carrying any further. They contained an excellent Fortnum and Mason lunch for four persons which I am afraid we regarded as the "unexpended portion of the day's ration"; we thoroughly enjoyed our discovery. At least the Germans did not get them as they otherwise would, for they were in Ostend within two days.

I stopped at Thourout that night, and next morning, the 13th, instructions were received that Gerrard and I were to return to

England forthwith and report to the Admiralty. This was a great disappointment to me at the time for I felt that our reconnaissance work was going to be of great assistance to General Rawlinson, whom I had met for the first time. I was greatly impressed by this fine soldier who seemed to be taking everything quite calmly in a situation which, even to such small fry as myself, seemed likely to become even more sticky. So I left Samson's outfit of miscellaneous aircraft and armoured cars, which accompanied the 4th Corps in their withdrawal towards Ypres, and found my way back to Dunkirk *en route* to the Admiralty to hear what fate had in store for me.

On the 14th, I duly reported to the Director of the Air Department in rather a dejected frame of mind, but I was soon reassured when he told me that I had been selected to form No. 1 R.N.A.S. Squadron as a proper organized unit at Fort Grange, Gosport. Gerrard was to form No. 2 on similar lines at Eastchurch.

All details as to complement of officers and men, transport, etc., were left to us to work out on the basis of twelve aircraft in the squadron, which was to be fully mobile and able to work alongside the R.F.C. Certainly we received every assistance from Captain Murray Sueter and his staff at the Admiralty and I was allowed to recall Bigsworth to act as my Second-in-Command. The first step was to get Fort Grange ready, both as regards landing-field and accommodation in the old and extremely damp fort. At the same time, our nucleus of key naval technicians managed to round up, from the bicycle and motor shops of Portsmouth, some promising lads who were signed on as direct entries in the squadron. Their training took some time, but most of them turned out excellent ground crews and remained with the squadron throughout the war. The first flight to be formed was equipped with four 80 h.p. Gnome Bristol tractor type aircraft, which were easily obtainable from Farnborough as the R.F.C. had turned them down.

I was lucky enough to be within easy reach of my wife, who was still living at Warsash, and we saw quite a lot of each other for the few weeks before November 18th, when the Admiralty ordered the one formed flight of Bristols to proceed to Newcastle forthwith for coastal reconnaissance duties. Apparently an attempt at an invasion by the Germans on the coast was considered quite likely, and the necessary defences were being prepared with feverish haste.

I led the flight as far as Farnborough, where we were forced down by snow and bad visibility, and as the weather did not clear the next morning I arranged for a special train which took the Bristols, ground crew and ourselves through to Newcastle by the following morning. It was a good example of efficient railway organization, and also it gave some idea of how seriously this invasion idea was being regarded.

Our landing-ground adjoining the Town Moor belonged to Armstrongs and it was quite the worst from which I have ever operated—trees on three sides and a live overhead tramway wire on the fourth. Here we got going very quickly as the Bristols were towed out from the railway station on their wheels, which left only the planes to be assembled.

We did coastal patrols as often as the foggy conditions permitted, but no invasion materialized, and after a fortnight or so I was recalled to Fort Grange to complete the formation of my Squadron.

Before going south I had the opportunity of seeing the first *Ark Royal* under construction at Blythe. She was laid down as an ordinary merchantman but was being converted to carry sea-planes. I also had the privilege of looking round Armstrong's works on two or three occasions. The Director invited us to dinner and we met old Sir Andrew Noble, the head of the firm. I was impressed by the number of women who were working in the factory—at least 1,000 of them in the fuse shop and others elsewhere. The firm was building B.E.2c aeroplanes for the R.F.C., their first venture at aircraft construction.

Back at Fort Grange early in December the formation of the squadron progressed satisfactorily and our numbers began to swell. I. T. Courtney, Osmond, J. T. Babington, Sippe and many younger members joined. Eight 80 h.p. Gnome Avros and four 80 h.p. Gnome Sopwith Scouts were received and with these we completed our formation. The Bristol flight at Newcastle remained up there and were eventually detached from No. 1 Squadron. Close to Fort Grange an Army Remount depot provided us with an occasional ride and there were plenty of opportunities for recreation for officers and men in Gosport and Portsmouth. The Naval C.-in-C., Admiral Meux, took an interest in this first naval squadron, as also did his Flag Commander, Basil Brooke, and they were most helpful in every way. Towards the end of December some of the R.F.C. began to arrive at Fort Grange; amongst them Herbert, who had been on the 1912 Army

manœuvres with me, also Ludlow Hewitt (Inspector-General of the R.A.F. 1941-5) who was training his flight in artillery observation. I think both R.F.C. and R.N.A.S. learnt quite a lot from each other during the few weeks we were together on the same aerodrome.

On January 1st 1915 I was promoted to Wing-Commander, which in the R.N.A.S. meant a brass hat and three gold stripes. However, I still kept my squadron, which began to move to Dover as soon as our transport, consisting of Austin lorries and Talbot tenders, arrived to take the ground personnel by road. The move of the first flight was hastened by the appearance, for the first time, of a German aeroplane at Dover. Avros, armed with a rifle strapped to a strut and firing so as to clear the airscrew, formed the war flight commanded by Flt.-Lieut. J. Babington. Needless to say they did little harm to a high-flying German Taube, and there was no warning system in existence to give notice of the approach of enemy aircraft. The remainder of the squadron followed to Dover by the end of January and Fort Grange was turned over to the R.F.C. At Dover we completed our training and got ready for France. Our aerodrome was close to Dover Castle, at the top of the hill, and officers and men were billeted in Dover itself.

The Germans were by now preparing Zeebrugge, Bruges and Ostend as submarine bases and it was decided that these should be bombed. A mass raid was planned for February 11th and on that date sixteen aeroplanes of various sorts set off from Dover led by myself with Flt.-Lieut. Dyott as passenger in an Avro. We now had a bomb rack for four 20-pound bombs, which one could release from the pilot's seat by means of a toggle and wire. Some seaplanes also joined the party from the seaplane station just below the fort.

It was not long before we ran into a snowstorm with the result that only three pilots got through to the German side of the lines. Flt.-Lieut. Sitwell got to Zeebrugge and dropped his bombs, getting shot up at Ostend on his way back by machine-gun fire which damaged his machine but failed to bring him down. Flt.-Lieut. Haskins also got through, as also did Flt.-Lieut. R. J. Bone in a Short seaplane; the rest of us landed at Dunkirk. The raid was repeated with better results next day when a total of twenty aeroplanes took part. Flt.-Lieuts. Rosher and Riggall, two good direct entry pilots, got to Zeebrugge and dropped their bombs on the mole. Sad to relate, we lost Riggall a few days

later in another raid, the first war casualty of the squadron. On this occasion we had the support of a French squadron which was working from the same aerodrome as ours outside Dunkirk; they bombed the German aerodrome at Ghisteltes. As a result of these raids it was eventually confirmed that at least one submarine had been damaged.

On the 26th February the squadron moved from Dover to Dunkirk, the cross-channel steamer *Empress* providing accommodation for those officers and men for whom no room was available at St. Pol aerodrome till Samson's squadron had left for England *en route* to the Dardanelles.

The duties of the R.N.A.S. at Dunkirk could be summarized as follows: (1) To endeavour to prevent Zeppelins and aeroplanes operating from bases in Belgium for raids on England. The big German airships had already started their offensive and were causing considerable annoyance. (2) To attack enemy submarines using Ostend and Zeebrugge and to obtain information as to their movements. (3) To co-operate with the monitors, both in spotting for their bombardments off the Belgian coast and in protecting them from aerial attacks. (4) To obtain information by coastal reconnaissance, as to movements of shipping at Ostend and Zeebrugge. (5) To develop aerial photography and wireless communication from aircraft under active service conditions. These duties we carried out to the best of our ability with the primitive equipment at our disposal, and with the small number of officer pilots and aeroplanes available. As far as possible, pilots were allotted to specific tasks and their initiative and enterprise were beyond all praise.

Flt.-Lieuts. Evill and Haskins, with Observer D'Albiac (our squadron musician) developed gun-spotting methods, using wireless telegraphy to communicate results to the monitors and naval shore batteries. Others whom I remember as having particularly distinguished themselves in bombing submarine bases, Zeppelin sheds or aerodromes included Squadron-Commander I. T. Courtney, who with Flt.-Lieut. Rosher in March, raided Hoboken docks at Antwerp where the small submarines were being erected; Flt.-Sub.-Lieut. Andrea and Flt.-Lieut. Jack Wilson of Grand National fame; Sippe; Squad.-Leader Bigsworth, who damaged a Zeppelin in the air; Goble of Australia, Mills, Rose, Mulock from Canada, Warneford, V.C., and our cheerful and very helpful Intelligence Officer, Villiers.

On the night of the 6th June 1915 three German airships,

L.Z. 37, L.Z. 38, and L.Z. 39, left their sheds in Belgium for an attack on England; though they did not cross the English coast they were reported to me over the direct telephone line from the Admiralty as being on their way back. I sent off Warneford and Rose on their Moranes to intercept in the vicinity of Ghent, and Wilson and Mills in their big weight-carrying Henri Farmans to bomb the Zeppelin sheds at Evere, near Brussels. I hoped by this arrangement to catch one or more Zeppelins in the air, or, failing that, to set them alight after they had returned to their sheds.

Warneford in his Morane sighted L.Z. 37 near Bruges in the very early dawn and climbed above for his attack, which was made with 20-pound bombs, one of which exploded on the airship and destroyed it but turned Warneford in his Morane over on his back. His petrol supply failed temporarily and he made a forced landing in enemy territory. He got it right, started his 80 Le Rhone engine up unaided and got away safely. Later he ran into an early morning fog in which he missed Dunkirk and pitched on the sands near Calais. Meanwhile Wilson and Mills managed to find Evere in the dark in spite of very heavy and accurate A.A. fire and set light to L.Z. 38 in its shed, which went up in flames, destroying the hangar as well. That was a very satisfactory night for No. 1 Squadron R.N.A.S.

Warneford received the V.C. for this, the first of the Zeppelins to be brought down in the air. He was one of the most astounding characters I have every met and was sent over to me from Eastchurch with a very indifferent "chit" to the effect that he lacked discipline and was as wild as a hawk. On his joining my squadron, I told him that he seemed to have an unsavoury reputation but that he would be judged solely on what he did in my squadron and not on his past record at Eastchurch. That night he drove one of my precious Talbot tenders into a ditch and damaged it severely when returning to camp: I said I would give him one more chance and if he offended again, out of the squadron he would go.

Next morning he was detailed for his first coast reconnaissance to Zeebrugge and he left with an experienced observer. After two and a half hours there was no sign of him, so I presumed he had forced landed, having run out of petrol. However, he turned up with no more than a few pints left in his tank and out stepped a shaking observer who gave me his report but asked that he might never again be sent with such a mad pilot. He then described how

Warneford, in his slow old Voisin, had chased a Hun aircraft over Zeebrugge and Ostend right down on to the enemy aerodrome, firing at it with a rifle.

Here was a case of a man who knew absolutely no fear, and my problem was to keep him alive as long as possible and use him to do the maximum damage to the Germans. I therefore allotted him a single-seater Morane and gave him a roving commission. This aircraft was one of the first to be fitted with a machine gun firing directly ahead through the airscrew, the blades of which had steel deflectors fitted to turn aside those bullets (about one out of every ten) which would otherwise have pierced the blades. Roland Garros, a French fighter ace, had some considerable success with a machine so fitted. It was later that the interrupter gear was developed which actually synchronized the firing of the machine gun to avoid shooting the blades of the airscrew off.

With his Morane, Warneford spent many hours over the front line attacking German observation aircraft with varying success and usually came back with a good few bullet holes in his machine, so much so that I managed to get him a second Morane for use when the other was out of action.

In April a particularly loud bang happened in Dunkirk which we first thought came from the German aeroplane we could see overhead at a considerable height. However, next morning the French Governor in Dunkirk sent for me and asked why the British Navy had allowed the German ships to bombard Dunkirk. I replied that no German ship had been near Dunkirk at any time, and he then asked me from whence came the 15-inch shell which had landed in the town the previous evening. He had had some bits collected which conclusively proved it was a shell and obviously fired from a gun. I said it must have come from the land, but as the range to the nearest point in the enemy's lines was some twenty miles, it seemed inconceivable.

Next day the shells began to arrive at regular four-minute intervals, so all available aircraft were despatched to watch the front line from Dixmude to the sea and to time and locate all gun flashes. We eventually pin-pointed the offender at Clerken not far from Dixmude and, amongst others, Warneford was sent to bomb the gun and emplacement. This he proceeded to do from fifty feet, according to the French gunners who saw him from our side of the inundations, which at this point separated the opposing forces. Between us we silenced this gun for the time being, but

it was not very long before either it, or a similar gun, opened up again and had to be dealt with once more.

After Warneford's successful Zeppelin enterprise, I sent him to Paris to collect a new Henri Farman aeroplane, which I warned him had to be treated with considerable care in the air; but my warning was not heeded, for he pulled the elevator back too sharply when doing his test flight, broke off the tail and crashed fatally. A sad end to a very brave flier, and his death was a great loss to the squadron.

Another most interesting character was an observer, Jones, who was a hunchback and weighed only six stone. He first came to the aerodrome at St. Pol in some sort of uniform acting as chauffeur to Sarel, the British Consul. He begged to be taken up for an operational flight and I sent him off with an experienced pilot on the Zeebrugge Coast reconnaissance. On his return I asked what he had seen and I got from him a most detailed report of what was inside Ostend and Zeebrugge harbours. No, he had not been using field-glasses; it was just that he had abnormal vision, perhaps nature's compensation for his other physical deficiencies. I lost no time in getting him commissioned and appointed as an observer to my squadron, where he served for a few months before leaving for the Dardanelles. I heard of him later as the one observer who really was a captain of aircraft, for if the pilot did not fly sufficiently close to the objective he wanted to observe, or attempted to turn back too soon when things were getting hot, Jones, from the passenger seat behind the pilot, would produce a spanner, and with this, held in close proximity to the pilot's head, would enforce his wishes. This unsung hero was, later, lost in a seaplane during operations against submarines in the Adriatic, but what a glorious few months for this brave little fellow who served his country so very actively.

I should mention here how much of the development in improving gun fittings, wireless apparatus and bomb-dropping gear was due to our own ground staff. Warrant Officer Scarff, who had been a naval engine room artificer, designed a Lewis gun rotating mounting, which later was called "the Scarff ring," and he was also responsible for considerable improvement in the bomb-dropping equipment. One is apt to forget what we owed to our ground staff for the success of our operations.

Millicent, Duchess of Sutherland, with her daughter Lady Rosemary, was running a hospital at Dunkirk and I frequently met this very charming lady, whose every enquiry for assistance

in one direction or another was a command, especially to the Frenchmen. My transport was getting very part-worn as a result of the appalling state of the roads and the many calls made on it. One evening I was rung up on the telephone and asked whether I could spare the Duchess some transport to assist in the move of her hospital to Calais, where the French had persuaded her to go as being a bit safer than Dunkirk. As it happened I was returning to England the following morning by destroyer for some conference at the Admiralty, so I was very brave and said I was sorry that this time I could not oblige. Next morning I was driving to the docks to board the destroyer to Dover when I was hailed by the great lady herself and thanked for allowing her to have the lorries for her move. I said she must have got the message wrong as I had said "No" to the request the previous evening. She seemed about to burst into tears, though I am sure she would have done nothing of the sort, and she looked so charming in her leopard-skin coat that I relented, with the result that she got what transport she needed and established her hospital at Calais. This lady was not only charming but also extremely brave. On more than one occasion she drove her ambulance under heavy fire. The world is better for such women and thank goodness the British race is lucky in this respect, as two great wars have very convincingly proved.

Another ambulance driver with a wonderful reputation for total disregard of shellfire was Lady Dorothy Fielding. She was well known on the Nieuport front, especially by the French Marine Fusiliers who were usually "in the line" there, and also by the British naval gun contingent under Commander Henry Halahan.

The Belgian King Albert with his staff was living at La Panne, which was close to the French frontier on the coast. Here, also, lived the British Military Mission under General Tom Bridges with a staff which included Prince Alexander of Teck and Major John Baird. I kept in close touch with the mission and with these three very distinguished men. General Bridges afterwards commanded a division and lost a leg when paying one of his very frequent visits to the front line. He later became Governor of South Australia. Prince Algy, as the Earl of Athlone, became Governor-General of South Africa and later of Canada. Jock Baird, as Lord Stonehaven, was Governor-General of Australia.

The Duke of Westminster, with his R.N.A.S. Squadron of armoured cars, came to Dunkirk some time during this spring. On paper they came under my control, as senior R.N.A.S.

officer, but their operational rôle was not very clearly defined, and just at that time the Western front had become very static. Westminster asked me to come and see a shoot with one of his three-pounder armoured lorries. We went in his Rolls car to the scene of action near Neuve Chapelle, stopping the night at General Rawlinson's headquarters near Merville *en route*. In the very early dawn of the following morning we drove in the armoured lorry to a position just behind our front line and at 1,500 yards range opened fire at a ruined cottage which the Germans were using as a machine-gun post. We had not fired many rounds before a sleepy and tousled head poked itself out of the remains of a house close to our firing position and its owner asked what the hell we thought we were doing disturbing the calm of his specially selected forward observation post, which he was operating for a battery of fifteen-inch howitzers further back. He said he had had nothing near him since he had been there and that now we had gone and spoilt it all. I fear he was right for no sooner had we demolished the objective and begun to move off than the Boche started to shell the position from which we had been firing. It seemed difficult to be offensive with armoured cars in static warfare without offending one's friends. I saw much of Westminster at this time and was sorry when he left with his armoured cars for Egypt, where he did some excellent work against the Senussi in a country more suited to such mobile warfare.

At home, my wife was still living at Warsash and in my short leave periods I was able to see something of her and daughter Janet. On June 13th (1915) our first son was born, later to be christened Richard Maitland. Food rationing had not yet come in and I could still use my private car, at that time a very reliable and solid 16 h.p. French Brasier.

British Expeditionary Force Headquarters were at St. Omer and I met there Generals Sir William Robertson, Chief of Staff, and Sir Henry Wilson. Sir Henry was in charge of the French mission and this very brilliant general impressed me immensely. I remember having an argument with him about the submarine warfare, then becoming very acute; the U-boats were causing considerable trouble in the channel and approaches to our ports and the sinking of our merchant ships was increasing. Sir Henry contended that just as cavalry opposed cavalry, gun countered gun, British submarines should be able to deal with the German submarines. I endeavoured to convince him that the problem of readily identifying submarines was not an easy one, and un-

fortunate mistakes were more likely to be avoided if we ensured that our own were kept out of the way, so that surface craft and aeroplanes could operate freely against any submarine they sought. I must admit, however, that two years later we did use our submarines for hunting U-boats.

The Royal Flying Corps Headquarters were also at St. Omer with Trenchard in command. I kept in touch with him and his staff, one of whom was that very refreshing person Maurice Baring, personal assistant *cum* secretary to "Boom," the name by which the R.F.C. Chief was known throughout the service. With the R.F.C. we interchanged ideas and occasionally equipment and aircraft for some particular task. During 1915 the R.F.C. was mostly equipped with B.E.2c aircraft, a reliable and stable little two-seater but with a very limited performance. We of the R.N.A.S. did not envy those R.F.C. pilots and observers who called at our Dunkirk aerodrome nearly every afternoon at the same time on the way round their evening enemy rail reconnaissance. The Germans had by this time produced some new types which were more than a match for the slow old B.E.s and a good many interceptions took place.

There seemed to be little or no collaboration between the Admiralty and War Office in regard to the supply of aircraft and equipment. Each department placed its own orders or bought the aircraft "off the peg" in Paris. At one time we were supplied with some forty or fifty French Nieuport two-seaters of quite good performance and had at least half of them sitting in reserve at a time when the R.F.C. were hard pressed and running short.

Towards the end of 1915 it became evident that the German was rapidly gaining a position of air superiority in aircraft both in quality and quantity. I said so rather too strongly to the Air Department of the Admiralty.

In January 1916 I was warned for a period of sea service as Lieut.-Commander and said good-bye to the R.N.A.S. at Dunkirk. No. 1 Squadron had a good record and I was proud of it. Within fifteen months it had been raised, organized, trained and had operated so effectively that it had to its credit: two Zeppelins completely destroyed, one in the air and one in its shed, a third badly damaged, so that it had to be dismantled; submarine activities at Bruges, Zeebrugge, Ostend and Antwerp had been seriously interfered with and two or three U-boats had been badly damaged at sea, in harbour, or on the slips; wireless signal communication had been developed to a stage which enabled

FROM SEA TO SKY

aircraft to spot the monitor gunfire at long ranges and, added to these achievements, the occupied ports on the Belgian Coast were under frequent observation by regular coastal reconnaissance. In 1918, when the R.N.A.S. was merged into the Royal Air Force, No. 1 Squadron became No. 201 and since then has mostly operated as a flying-boat squadron.

THE BATTLE OF JUTLAND

I RECEIVED the first news of my new appointment from the *Daily Mail* of January 18th 1916: "To H.M.S. *Tiger* of the 1st Battle Cruiser Squadron as a lieutenant-commander." This sounded very promising and I was glad to get official confirmation of the appointment through the usual channels. On January 24th, I joined this fine ship at Rosyth in the Firth of Forth and immediately found myself amongst friends who gave me every assistance to bring myself up to date in the Naval technique of a modern big ship, for it was now seven years since I had left H.M.S. *Good Hope*.

The *Tiger*, commanded by Captain Pelly, was the latest of the modern battle cruisers and with the *Lion*, *Princess Royal* and *Queen Mary* formed the first division. The second division consisted of the *New Zealand*, *Australia* and *Indefatigable*. The older battle cruisers, *Invincible*, *Indomitable* and *Inflexible*, formed another division, but they were usually with the Grand Fleet at Scapa. The Battle Cruiser Force, therefore, which went to sea from Rosyth, numbered seven ships. In addition, there were attendant light cruisers as advanced screens, and destroyer flotillas for anti-submarine escort. Vice-Admiral Sir David Beatty still wore his flag in the *Lion* with Captain Ernle Chatfield as his flag captain. All four ships of the first division mounted eight 13.5-inch guns, a pair in each of the four turrets, in addition to a subsidiary armament of 6-inch guns. They could keep station at 25 knots and the *Tiger* was good for 28 knots when pushed. Our anchorage was above the Forth Bridge and at normal times we were at four hours' notice for steam, but this was frequently shortened to one hour. When at four hours' notice, a certain number of officers and men were allowed ashore for recreation between 1.30 p.m. and 5.30 p.m.

The duties allotted to me included those of senior watch-keeper, which carried with it the responsibility of arranging the roster of watches in harbour and at sea. My battle station was in charge of A turret, right forward. I had much to learn both on the bridge and in my turret and I certainly set about it with zest, for everything was of the latest design, including the Gyro compass

which I had not met before. I reckon that it took me about six weeks to become once more a normal and reasonably efficient naval officer. The very thorough basic training I got from the age of fourteen onwards probably accounted for the rapidity with which I picked up the hang of things again.

In looking back on those days, I still marvel at the slick efficiency with which the B.C.F. (Battle Cruiser Force) would go to sea in all weathers, in mid-winter, at night without lights, form into line and keep station with attendant destroyers on either side. Even before reaching May Island we would go on to 22 knots: out on to one of the many fruitless sweeps towards the Horn Reef ordered by Admiralty on secret information, which they seemed to obtain in a most uncanny manner.

I remember one such occasion when we were well over towards the Skagerrak. I was officer of the watch; it was pitch dark and there was a fairly thick fog. We were the fourth ship in the line astern of the *Queen Mary*, whose fog buoy, splashing on the end of a 400-yard line, gave us the only indication that we were in station. The signal came over the short distance W.T. buzzer to alter course 16 points (180 degrees) in succession, a manoeuvre which, under the existing conditions, meant careful timing by a stop-watch to calculate when to put our helm over so as to keep in the correct position astern of the *Queen Mary* on the new course. The captain was on the bridge and whilst I was counting seconds before giving the helm order, he said to me, "Mind the destroyers." This seemed to me a superfluous remark as one could see nothing whatever, and so, without thinking I said, "It's all right, sir, they're smaller than we are." I finished counting and gave the helm order. We completed our turn, remained in station on the next ahead and the destroyers looked after themselves. How efficient these battle cruisers and indeed the Grand Fleet itself had become during eighteen months under war conditions was not probably fully realized by those concerned, but it certainly seemed remarkable to one who had not been part of it from the start.

At sea, when not on watch, we all slept at "action stations" which meant, in my case, a hammock slung between the two guns inside the turret. It was a stuffy sleeping quarter and one had to get used to the creaking of the hydraulic system which went on all night. I reminded myself, however, that we were, after all, far better off than the P.B.I. (Poor British Infantry) in the trenches in France, for so long as our ship remained afloat at least we were near a hot cup of cocoa and something to eat.

THE BATTLE OF JUTLAND

Like all those who go down to the sea in ships, particularly in war-time, I lived by the clock. Duties, meals, the boat to take officers ashore or on board, all these at set hours; even my occupation off duty I regulated by the clock. I allotted a period for polishing up my French, another to writing out lectures which I gave on board the *Tiger* and in one or two other ships on air developments. It was not long before I found myself linked up with my recent trade.

Zeppelins raided Leith and Edinburgh in April and I was made a member of the B.C.F. Conference which considered anti-Zeppelin defence. On May 4th, the battle cruisers, with the Grand Fleet in support, covered an operation by the seaplane carriers *Engadine* and *Vindex* in the region of Horn Reef. These two ships were converted cross-Channel steamers with a hangar for four seaplanes aft. Out of six seaplanes which were to have raided an airship base at Tondern, in Schleswig-Holstein, only one managed to get off the water and it did not return. The operation was part of a plan to draw the German High Sea Fleet out to sea, but it failed to do so. There was disappointment that the seaplanes had not done better and I was detailed as a member of the Court of Enquiry to investigate the matter. It turned out to be a clear case of overloading the Baby Sopwiths, which were endeavouring to get off the water with two and a half hours' fuel and two 65-pound bombs. Subsequently, Admiral Beatty made me a member of a Standing Air Committee and I was constantly on board *Lion* discussing air matters.

On one occasion we visited Scapa, the base of the Grand Fleet, and here I went on board *Campania* with my admiral. She was a converted Cunard liner and carried a seaplane launching platform 170 feet long and had housing capacity for two kite balloons, eight Short seaplanes and six Sopwith Scouts. The kite balloons were intended for observation of Fleet gunnery and not for barrage purposes, their rôle during the second world war. The seaplanes could fly off the platform by using a trolley under the floats. Through some mischance this seaplane carrier did not accompany the Grand Fleet to sea during the Battle of Jutland, and only the *Engadine* was out; from her one reconnaissance was made by Flt.-Lieut. Rutland and Observer Trewin before the action commenced.

After I joined my ship it was not long before my wife found it possible to park our two children at her father's home and come up to South Queensferry, where she stayed at Hawes Inn and

later at some lodgings close to the landing pier. On the days when I got ashore for the stipulated four hours, she would join me in some expedition. As we had our car with us there was much that we could do in the time; even a late lunch was possible at the Caledonian Hotel, or with some friends in Edinburgh. There were at least three good golf links within reach and we had the use of tennis courts at Hopetoun House, the Linlithgow home, and of one or two squash courts. It may have been a boring and sometimes an anxious time for my wife but it certainly made a lot of difference to me in providing a complete change from ship life, even though only for two or three hours.

Lady Beatty had a delightful house at Aberdour on the north side of the Firth and I remember spending a very pleasant Sunday afternoon there hunting rabbits with the Admiral and his pack of Cairn terriers. It was good to see him throw away his cares and responsibilities for a brief period and enter wholeheartedly into the sport.

Towards the end of May I heard that my time in the *Tiger* was coming to an end and that I was likely to be returning to air duties. Fortunately for me the change did not immediately take place and so it was that on the 30th May 1916 I found myself as duty recreation officer taking a batch of sailors in a cutter out for an afternoon's fishing.

We had rowed down below the Forth Bridge, pulled the cutter ashore and got the seine net out when someone noticed black smoke coming out of the ship's funnels and the signal flying for "short notice." The net was hastily collected in, and we took some time getting the cutter off the mud as the tide had gone out and left her high and dry. Then a long row back to the ship, where we found them already working cables preparatory to unmooring.

It was not long before the great ships were silently slipping out one by one under the Forth Bridge, through the submarine net gate and so into station at 22 knots with our usual escort of destroyers on either side, out past May Island, into the black darkness of the North Sea.

As we were sliding along on our way out, a figure in a bowler hat came on deck protesting loudly that he wanted to be put ashore. He was one of an armament firm's specialist workmen who occasionally came on board for some particular repair or adjustment to one of the many new instruments in the ship. It was, of course, the practice to put them ashore before going out,

but this time, in the unusual hurry, the man had been forgotten and he was very annoyed about it. However, there was nothing to be done unless he felt like jumping over the side and swimming ashore, for the *Tiger* did not look like stopping for anything just at that moment. Actually during the battle on the following day he was extremely useful in repairing some damage and when we finally got back his chest was bigger by inches than when he started.

Historians have dealt very fully with the Battle of Jutland, so it is not my intention to do more than give my personal recollections of the battle.

Dawn on May 31st found us well out in the North Sea, still steering to the east. We were *Lion*, *Princess Royal*, *Queen Mary*, *Tiger*, *Indefatigable* and *New Zealand* of the battle cruisers, and *Barham*, *Valiant*, *Warspite* and *Malaya* of the 5th Battle Squadron, —plus two light cruiser squadrons and destroyer flotilla.

The weather was calm, visibility good, deteriorating somewhat later in the day. The forenoon was uneventful and after lunch I was having a snooze in the wardroom when, at about 3.30 (British Summer Time), action stations were ordered and the message came through that one of our light cruisers, acting as a screen ahead of the squadron, had sighted a German cruiser.

We were, by this time, well over towards the Skagerrak and somewhere about 56° 40' N. and 5° E. About 4 p.m. the message came through that ships of the German 1st Scouting Group, our opposite number, were in sight ahead. The order to load the guns followed and, after the loading cage and hydraulic rammers had done their work, things were again quiet for the moment. Inside my turret, I slid the top of my armoured look-out tower back and had a look round. It was not as clear as before, but sea conditions were ideal for seaplanes to operate, yet none appeared and I never saw the one from the *Engadine*, it having by that time returned to be hoisted in.

Thereafter the air was forgotten in the excitement of what looked like becoming a major sea battle, to which every sailor had been looking forward during his whole career. It was as much as the *Engadine* could do to keep pace with the battle cruisers. To stop and hoist out a seaplane would have meant being left far behind.

Through a pair of strong glasses, away over on the port bow I could see the masts and superstructures of what were later to be identified as the *Lutzow*, *Derfflinger*, *Seydlitz*, *Moltke* and *Von der*

Tann under Admiral Von Hipper. As we were on converging course it was not long before the range-finders were beginning to record. I took a last look round before closing up my sliding hatch and I distinctly remember wondering to myself how long it would be before all five Huns would be sunk. After all, we had six fine battle cruisers and, coming up behind us, four of the latest fast battleships; it certainly looked like a sitter to me.

Twenty thousand yards—nineteen thousand—stand by—the gun layers feverishly turning their elevator wheels to follow the pointer, as we were in director firing—the turret trainer, a big bearded fellow, had his sights trained on the fourth ship in the line. Eighteen thousand—seventeen thousand, and bang went a broadside of four 13·5 armour-piercing shells *en route* to their destination. A pandemonium of noise once more whilst the right gun was loaded, the roar of the cage hoist: the shouted orders of the loading numbers: the rattle of the rammer as it pushed home the great projectile into the breech with a hollow thud, then once again quiet for the moment.

The enemy must have opened precisely at the same time, for the next thing that happened was a concentrated salvo which arrived less than 100 yards ahead of our stem and absolutely correct for range. "Good shooting," I thought as we steamed into the cascades of water which were thrown up by the explosions and which came down in torrents over my turret and temporarily fogged up range-finders and sights.

A short warning by gong, and off went our left gun this time, again fired from the director control. I hoped our turret trainer was on his target when the gun went off, as that water splash hadn't helped him much to see clearly.

A different sort of bang this time and a shudder of the ship; a salvo had hit us round my turret somewhere. Everything seemed to be functioning except the "blast bags," those canvas shields strapped loosely on to gun casing and apertures to prevent back flash and smoke from entering the turret when firing on a forward bearing. These had completely gone and to make the atmosphere inside the turret even more unhealthy the fumes from a fire raging in the sick bay below came and enveloped us. The sailors in my turret coughed and sneezed; stripped to the waist and getting blacker every minute they looked like the pictures of Trafalgar days.

It seemed to me that we were obviously in for a pretty good scrap and not too one-sided by any means, if the Hun managed

to continue this accurate fire in such concentrated salvoes with his 11-inch guns.

Next, a message from my magazine party below saying that they were being gassed. I thought it unlikely but told them to put their masks on. Anyway, they could not have been much worse off than those of us above. I did not realize at the time that one of the 11-inch shells had cracked the base of my turret and presumably the acrid smell of the high explosive had penetrated below and reached the men.

I could not see much of what was happening to the enemy as a result of our fire, and it was, of course, the business of the spotting officer and not the turret officer, but peering through the slit of my look-out, I could still see the five enemy ships. By this time, some of them ought to have disappeared. I did not know that the *Indefatigable*, our next in line astern, had already blown up.

About 5.30 I was again having a look at the enemy, when a dense cloud of black smoke, dead ahead, came back over us and next moment I saw the *Queen Mary* go up and disintegrate completely. Thirty thousand tons and 1,300 officers and men gone in a flash. We put our helm over and avoided the debris of this fine ship which we had followed through all weathers so faithfully for months. It was a sad reflection, but I was too busy to spend much time thinking about it.

We had been firing steadily with alternate right and left guns, when my right one packed up and refused to run out after recoil. It took some time for the experts to locate the trouble which turned out to be a fractured running-out cylinder to which there was no hope of immediate repair. There was nothing else to be done but to speed up the loading of the left gun and use it on each salvo, for we still continued in director firing. Thank goodness we did, because our range finders and sights were, by this time, so fogged up with fumes and water splash that we couldn't see much.

Soon after the *Queen Mary* had gone, things became very hot and enemy fire seemed to be coming from another direction. I learnt soon after that we had run into the German High Sea Fleet under Admiral Scheer, and that we were leading them back into the jaws of Jellicoe's Fleet, somewhere away to the north.

After some time, we were relieved to see our Grand Fleet, and later we turned round once more and took station on them. This gave us a well-needed breather, and a bit of time in which to tidy things up. My left gun must have been glad of a respite too, as it

was getting a bit hot. The right gun was out of action for good, but we had no casualties inside my turret and the magazine crew were all right again.

I opened up my hatch and sat on top for a bit. I could see *Lion* and *Princess Royal* apparently all complete and sliding along fast, also the very welcome sight of the Grand Fleet now fully engaged with their opposite numbers. The stern of a ship was sticking out of the water almost vertically and as we passed close by I could see the name through my glasses—*Invincible*—she had gone shortly before, with her splendid Admiral Hood on board and all but half a dozen officers and men. Some of my men were also on top of the turret and saw this sight, but they couldn't read the name and I said it must be a Hun. We were certainly not having it all our own way.

After a long pause in our firing, we opened up again about 6.30 on our German opposite number in the line; I had time to see that our shooting was quite accurate but did not seem to be producing the same results as the enemy's. I saw some fine work by a destroyer which was finishing off a German light cruiser. We passed quite close to the latter, which had lost a funnel and was badly on fire; she was still firing with one gun at the destroyer. It was the *Onslow* (Commander Tovey) finishing off the *Wiesbaden*, and eventually she did so without assistance from us; we were already fully occupied.

I saw two of the Warrior class cruisers come under concentrated enemy fire and one of them blew up. It was the *Defence*, with Admiral Sir Robert Arbuthnot on board, and she passed quite close to our line before it happened.

Next, a long interval with nothing much happening, in which the smoke of the battle was lying low over the sea making horizontal visibility very poor. We were not to know at that time that it was due to the two fleets steaming in opposite directions during Jellicoe's manœuvres to avoid the concentrated torpedo attack of the enemy destroyers, which fired at long range.

It was left to the light cruiser *Southampton* (Commodore Goodenough) to make this discovery. How valuable at that particular moment a reconnaissance aircraft would have been if only the *Campania* had been with the Grand Fleet and the *Engadine* had been operating her seaplanes instead of assisting a disabled ship.

We fired again at 9.30 but by then it was getting dark and the cease fire went soon after. Night cruising stations were ordered and we had time to go in relays and get something to eat. Our casual-

ties were 17 killed and about 40 wounded, most of them occurring in a 6-inch battery where there had been a bad cordite fire. Q turret (No. 3 from forward) was out of action and X (the after one) was hit on a level with the deck but had still kept going.

I was sad at heart; somehow I felt that we should have finished off those five Hun battle cruisers within an hour. We had only to do them sufficient damage to reduce their speed by five knots, and the 5th Battle Squadron would have had them. What was wrong? Weren't we hitting them? Were our shells no good or were their ships tougher than our own? Anyway, my turret's crew were grand and there was nothing the matter with the morale.

I slung my hammock as far away from the left gun as possible, for it was still very hot, slept intermittently till dawn and hoped for the best on the morrow.

In the early morning of June 1st, we received a signal from the *Lion* to the effect that there had been losses on both sides, that the *Lutzow* and *Wiesbaden* had been sunk, and that we were now looking for the German fleet to destroy it. Our search to this end continued throughout the day, but we saw nothing except a Zeppelin in the far distance.

At three o'clock in the afternoon we turned for home. We had hoped that we were still between the enemy fleet and Heligoland but they must have given us the slip. We were not to know till later that Admiral Scheer had got round to the north of us during the night.

At 6.30 p.m. we buried the dead at sea, an impressive ceremony, and left the scene of action where too many brave sailors had met their end. We were not very gay that night, and I remember keeping the middle watch, which saved me the trouble of trying to sleep in my turret.

June 2nd dawned and it was a poisonous morning with a very strong wind and rain squalls. Nothing of interest occurred but we kept on receiving reports of various submarines off the Forth and also an intercepted message to say that the battleship *Marlborough* was making for the Humber at 9 knots, evidently badly damaged. We heard later she had arrived safely.

We reached Rosyth at 10 a.m. and anchored with single anchor, as our starboard cable was cut and cable holder out of action. Then the work of getting the wounded ashore commenced, ammunition cases were unloaded and a general clearing up of the débris went on. About 3 p.m. the tugs came alongside and we went into Rosyth basin, alongside the *Princess Royal*, who had also

suffered some damage. Her X turret had a large chunk out of the barbette which had gone inside and jammed itself behind the left gun. The *Warspite* was already in dock and after dinner I went and had a look at her. Inside, she was an extraordinary sight, her steering gear had been jammed by a Hun shell at the end of the first phase of the battle. When we turned 16 points away from the enemy battle fleet, she had received the concentrated fire from the König class. Her casualties were light in comparison to the damage sustained and she was lucky to get back.

The next day I was able to get ashore for an hour or two and see my wife; she told me that they knew on June 1st that there had been a fleet action and that all sorts of wild rumours were flying about. Many of the wives who were at either North or South Queensferry had assembled to see the battle cruisers return, not knowing which of them had been sunk. My wife easily identified the *Tiger* with her three evenly spaced large funnels, but there was the *Indefatigable* missing and one of the other three big ones. It might have been the *Lion*, *Princess Royal* or *Queen Mary*, and it was not till the ships came quite close that those anxious women who were waiting knew it was the latter that had gone.

There is little to tell of the remainder of my time in the *Tiger*. We went into dock and leave was granted. I went south with my wife in the car by easy stages. At Alnwick we heard of the loss of Kitchener in the *Hampshire*, whilst on his way to Russia, which created a most profound impression. At Cranwell, Lincolnshire, we stopped a night with Commodore Godfrey Paine, who had opened his Royal Naval Air Service training station a few months before. He was most interested in my description of Jutland, and we had an enjoyable evening talking over old times.

Admiral Vaughan Lee, who had, by this time, taken over the Air Department at the Admiralty, told me that I was to take command of Killingholme seaplane station, which had recently been opened on the south side of the Humber, and in due course my appointment came through.

I returned to the *Tiger*, which was still in dock at Rosyth, to turn over to my relief and to say good-bye to my cheery shipmates, Macnamara, Blagrove, Lapage, Harrison and Co., as well as to Admiral Beatty and Captain Chatfield of the *Lion*. The Admiral seemed rather annoyed at my leaving his battle cruisers, perhaps because I had, by that time, become a sort of adviser on Fleet air matters. So ended my time in that fine ship which survived the war, but not the peace, for she was one that was sacrificed in 1931

THE BATTLE OF JUTLAND

on the altar of appeasement and unilateral disarmament. On April 8th 1931 appeared a poem in *The Times* by Maurice Baring called "The Last Cruise of H.M.S. *Tiger*, March 26th 1931," the last verse of which reads as follows:

Now *Tiger* has crept back into her lair;
She will not go a-fighting any more;
And there are few who knew and less that care,
But there are some whose hearts are very sore.
They'll skin her of her coat and break her neck,
And spoil her brasswork and her spotless deck,
Her purring padding engines (*Tigers* proper!)
And every shining piece of steel and copper
For all the pomp and power of black and gold
Drenched in story
Scarred with glory
Must now be broken up and sold,
And broken up and sold or thrown away,
And *Tiger* shall not live to fight another day.
For *Tiger* once the Flagship of Lord Beatty
Must now be scrapped forthwith, so says the Treaty.
And once upon the scrap-heap, not all the King's men
Will ever put *Tiger* together again;
Not all the King's horses; not all the King's men.

CHAPTER V

BACK IN THE R.N.A.S.

I took my uniform to Gieve, the naval tailor, to be altered once again, for I had been restored to my rank in the R.N.A.S. as a Wing-Commander, and with my original seniority. I think it was Mr. Gieve himself who said, "Which is it this time, sir, up or down?" I was able to reassure him that I needed one more stripe.

On June 15th 1916 I took over command of Killingholme, where some recently built sheds were waiting to house the new large American flying-boats which had not yet been delivered. Short float seaplanes with single 225 h.p. Sunbeam engines and a few Sopwith Scout seaplanes were in use, the former for patrols and the latter for interception of Zeppelins. Up to date they had not been very successful, and it was not a very well-placed station for operating seaplanes on account of the strong tide in the estuary and the large rise and fall which made slipway work difficult.

My first task was to get in some practice as a pilot after my six months' interlude, and I did this in the Shorts, which were very similar in handling to the ones I had flown two years before. It was also necessary for me to see something of the new big flying-boats which we were eventually to get. These types were under trial at Felixstowe and I took an early opportunity to visit that station.

I found a flying-boat designed by Porte, who was the commanding officer of the station, and mainly responsible for development of this type of seaplane. It had a large boat hull, biplane wings, three 250 h.p. Rolls Royce engines driving two tractor airscrews and one pusher, carried a crew of five and fuel for eight hours. The controls were operated by servomotors, and it had already done an eight-hour test satisfactorily.

In addition there were several smaller type American boats with two Anzani engines, and these were used for instructing pilots before they took on the bigger boats. Another boat of weird design had been delivered some time before; it looked like a floating conservatory with two floats and a double fuselage and three engines; but it was evidently not very popular for it had stayed in its shed ever since.

There was no doubt that development in design had gone ahead very rapidly in the last six months: an impression that was confirmed soon after when I saw the new Sopwith Triplane Scout with Clerget engine and a Vickers gun, actuated by an interrupter gear, which fired through the airscrew directly ahead.

Zeppelins were very active over the North Sea and England about this time. In August there was a report that ten of them were out, evidently scouting for some enterprise by the German High Sea Fleet. Flt.-Lieut. Fox managed to reach one in his Sopwith Scout off Spurn Head and damaged it. There were night raids on Hull and Grimsby; the technique of bringing them down at night had not yet developed and none of our machines were fitted for night flying.

Two paddle-wheel minesweepers were fitted to carry two Sopwith Scout seaplanes each. The idea was that the craft would be out at the entrance to the Humber at their usual work of sweeping for mines but in the evening would hoist out the seaplanes. These would take off and patrol for the Zeppelins which were, rather blatantly, making a landfall before dark to locate their positions for subsequent night operations. The Sopwith Scouts did not come into action whilst I was there, but the idea was quite good.

My wife took rooms in a farmhouse near Kirmington village and quite close to Brocklesby, the beautiful home of the Earl and Countess of Yarborough, a very charming old pair who very kindly gave us permission to play golf and tennis in their grounds. Life was not very strenuous, as there was a limit to the useful work which could be done with the equipment at our disposal, and we were some way off getting the big boats with which to do extended reconnaissance work in the North Sea. I was not sorry when in September I received a new appointment.

On the 8th September 1916 I took over command of Eastchurch Air Station from Commander Forbes. It had grown considerably since I had last seen it, and the aerodrome had been extended to the north-east with new hangars along the road-side. Activities included a flying school, gunnery school and a war flight equipped with night-flying B.E.2c aeroplanes. Total strength 90 officers and 900 men.

Zeppelins were raiding London frequently, and up to date they were getting away with it unscathed. However, on the night of 23rd September I saw two of them come down, the first in flames while the second caught fire after being forced down near Bright-

lingsea: first blood over England to the R.F.C., whose night pilots came from Sutton Farm aerodrome. The success was due to some new incendiary ammunition fired from Lewis guns mounted so as to fire upwards at an angle of 45° above the top plane. I flew over and saw the remains of the Zeppelin at Brightlingsea and was certainly impressed with its size and construction; it had six engines and was of the latest type, built only a few months before. Another was bagged on the night of October 1st, and again I saw a mass of flame come tumbling out of the sky somewhere north of the Thames. A fourth was brought down off the east coast by a R.N.A.S. pilot soon afterwards. It was, once again, a case of defence overtaking attack, and Zeppelins had to change their tactics. However, these were not very successful and after the debacle of October 20th 1917, when seven of them were lost out of eleven, principally as a result of bad weather, England was no more troubled by Zeppelins, and Gothas took their place.

It was at Eastchurch that I saw, for the first and only time, the effect of "tail flutter," which caused a fatal accident to the pilot of a new Sopwith triplane within a few feet of where I was standing. The pilot was doing a speed test low down, when I saw the tail flutter up and down twice before breaking away completely from the fuselage. It was not a pretty sight, but I was able to give a description of what had occurred, which was of some use to the designer. So often in those early days, before parachutes came to the rescue of aircrews, and particularly of test pilots, accidents remained unaccountable because the pilot did not survive to say what happened.

Over at Manston, near Margate, I saw John Babington with his new squadron of two-engined Rolls Handley Page night bombers which he was just about to fly over to Dunkirk. These aircraft, with their two 275 h.p. engines, carried a crew of four and had a capacity of 1,600 pounds of bombs with a range of 675 miles at a speed of 75 m.p.h. Their armament usually consisted of four Lewis guns.

Eastchurch was never a very lively spot and it was even less so in war time, particularly in the middle of the winter. We were lucky in having a Rifle Brigade depot close by and we saw quite a lot of their officers. A pack of beagles hunted the strong marsh hare, and provided good sport. There were cross-country runs for the officers and men, and bleak walks on which my dog Jock used to accompany me. He was a West Highland terrier, rather on the large side, and Admiral Neville had asked me to look after him

five years before when he went abroad. When he returned some six months later he naturally asked for him back, and after some procrastination on my part I eventually complied with his request. When I was married he wrote and asked me what I wanted for a wedding present and I replied, "Jock." So this canine friend rejoined me, and we had many hunts together. Though he was not built for speed, he actually accounted for two hares at Eastchurch; one of them was caught in a snare and the other must have been asleep. This dog, to which I became very attached, remained with me till 1922, when he went the way of all flesh. I mention him because he appears quite frequently in some of the photographs of early flying days. Rudyard Kipling's famous poem is so true. Why "give your heart to a dog to tear." Why, indeed, yet we continue to do it.

My time at Eastchurch came to an end in February 1917 when I joined the technical staff of the Air Board, then functioning at the Hotel Cecil in the Strand. This organization was formed during the previous year for the purpose of controlling development in the interests of the two flying services and also of regulating the supply of aircraft between them. My task was to keep in touch with naval air requirements and to represent that side in all questions of technical development.

The Navy had, by that time, taken very seriously to the idea of carrying aircraft in ships, as well as to the use of long-range reconnaissance from shore bases. For the next ten months I was constantly on the travel to Rosyth, Felixstowe, Grain Island, and the various aircraft works producing machines suitable for naval work.

I first saw the D.H.4 aeroplane in January (1917); it was designed by de Havilland and was well ahead of contemporary types in its class. It was fitted with a Rolls Royce engine; armed with one Vickers and two Lewis guns; could carry 450 pounds of bombs; had an endurance of $4\frac{1}{2}$ hours and a speed of 113 m.p.h. at 10,000 feet. A month or so later I flew one of these machines over to Dunkirk on a delivery flight and was greatly impressed by its performance and handling qualities. This type, with various modifications and a higher horse-power engine, survived for nearly ten years, and in India perhaps longer still.

Many technical conferences were held, at one of which the question of high-altitude fighting was under discussion. It was obvious that oxygen would be required in new types of fighters, but we were rather astonished when Captain Ball, V.C., one of

the R.F.C. fighter aces, said that he was quite happy at 20,000 feet without oxygen and that he never wore either flying cap or goggles. However, in all these matters we had to cater for the average pilot, and so all new fighters were fitted to carry oxygen cylinders and suitable masks were designed for the purpose.

At Felixstowe the development of the flying-boat had gone ahead rapidly and the new F.3 type was carrying a crew of four, five Lewis guns, four 230-pound bombs, petrol for $6\frac{1}{2}$ hours, with a maximum speed of 75 knots at 10,000 feet. It was with a machine of this type that two or three successful attacks were made on Zeppelins off the Dutch coast. A special lighter was designed for towing at speed astern of a destroyer, which took the hull of the flying-boat, leaving the wings to project over each side, but with any beam wind it was not very successful. The idea was, of course, to tow the flying-boat over towards the Dutch coast during the night, slip her at dawn to take off and patrol for any Zeppelin which might be out on North Sea reconnaissance. Another type of lighter with a flush deck carried a fighter which was also towed by a destroyer to the hunting ground during the night. In this case, however, the machine actually lifted straight off the lighter when towed at thirty knots into wind. This was a tricky method of release, and was first tried by Samson and later by another pilot, but it was not a method which came into general use.

A pilot, Reggie Leslie, who had been with me at Dunkirk and who was now doing ferry work, asked me if he could go and fly one of the small single-engined flying-boats at Calshot, to which I readily agreed. On his return he told me that he had enjoyed his flight over the Solent very much but that he had made the mistake of going too close to Gosport aerodrome, which was now the home of Smith Barry's Flying Instructors' school. Gosport taught a completely new technique of aerobatics as well as cross wind take-offs, and all sorts of liberties were taken with the Avro trainers they had for the purpose. Leslie went on to describe how the Gosport boys all flocked into the air and formed a solid phalanx between him and the sea. He was driven further and further away inland until, eventually, he pulled down the sun blinds in his enclosed type flying-boat and steered due south for fifteen minutes by instruments, finally coming out safe over Spithead. He heard later from Gosport how he had missed half a dozen collisions by inches. The Gosport boys were not always very kind to seaplanes that came their way, but the revolutionary system taught at that school was largely responsible for the success of fighter pilots in 1917 and 1918.

By this time Beatty had succeeded Jellicoe as C.-in-C. Grand Fleet and Pakenham was in command of the battle cruisers, with Phillimore in the *Repulse* as Rear-Admiral Aircraft. The big fast cruiser *Furious* was converted to carry seaplanes and had a large flying-off deck forward of the bridge. She was ready by the middle of the summer and carried, in addition to her reconnaissance seaplanes, some Sopwith Pup fighters. This type had done very well with the R.F.C. in France and was now to be used with the Fleet, but in order to make it suitable for stowage, modifications had to be made, such as the fitting of folding wings, etc. This, of course, added weight and detracted from performance. Such is the handicap from which all naval types carried in ships have suffered for the past twenty-five years, and the discrepancy in performance between the ship and the shore types increased as the years went on.

With this new enthusiasm by the Navy for reconnaissance and fighter protection, there was always the danger that more aeroplanes would be ordered and locked up for ancillary purposes than was really justified by the existing limitations on the means of operating them at sea. There were still occasions when the R.F.C. in France were short of aircraft for the work required of them whilst the R.N.A.S. were well off in that respect.

At Eastchurch, as one of the best night pilots, I had had the services of Flt.-Lieut. Dunning, D.S.C., and now he was one of the pilots in *Furious*. Not content with flying his Sopwith Pup off the forward platform he wanted to try and land on it. The manœuvre, which was to be done with the ship steaming fast, entailed an S turn in front of the bridge and funnel superstructure which, at that time, had not been altered. He eventually persuaded his enterprising captain, Nicholson, to let him try it, and the result was a success on the first occasion. His very manœuvrable Sopwith Pup with a low minimum flying speed arrived almost stationary over the platform and was actually pulled down on deck by the sailors.

He wrote and told me all about it, and I replied that it was a fine show as a stunt had proved it could be done by an expert pilot, but what we wanted was a flush-deck carrier to make it a practicable proposition. I concluded by hoping that he would not try it again, but alas! he did so five days later, on August 10th, and just had too much side slip on. He skidded across the deck, fell over the side and the ship passed over the top of his aircraft with him inside it. His death was not in vain, for it was not long

before it was decided to convert the *Furious* to a completely flush-deck carrier for landing on and flying off aeroplanes, in addition to the *Argus*, which was already under construction for that purpose.

Light cruisers were also, by now, being fitted to carry Sopwith fighters on a superstructure rigged up over the forward turret. In this development, another naval pilot, Rutland, was very prominent. The length of these runways was inconceivably short and the operation was only possible with the cruiser steaming at high speed into or just off the wind, which gave the aircraft its minimum flying speed in a matter of a few yards. Light cruisers *Dublin*, *Yarmouth* and *Caledon* were amongst those so fitted. From this idea developed the catapult system of launching which is now in use, but all credit to the naval pilots who flew the Sopwith Pups off turrets.

On one of my many visits to the Fleet during this interesting ten months, I went to sea in the *Repulse* as the guest of Admiral Phillimore, and I then saw the Grand Fleet which had been considerably reinforced since I had been in *Tiger* the year before. The American Battle Squadron had also joined up by this time. Seaplanes were operating from *Campania* and *Furious*, and there was no doubt in my mind that in the next Fleet action the air would not be forgotten.

One of the most interesting works I visited was Sopwith's, in what used to be Kingston Skating Rink. In February 1917 I saw the first Camel fighter biplane with 130 h.p. Clerget engine, which was about to replace the Sopwith Pup. Its speed was up to 111 m.p.h. at 10,000 feet, and it could climb to 15,000 feet in 20 minutes with a ceiling of 20,000. I also saw the fuselage of an incomplete machine which Sopwith told me had been ordered by the Admiralty some time before at the instigation of Commodore Sueter. I found it was designed as a land plane to carry an 18-inch torpedo and, with a 200 h.p. Hispano Suiza engine, had a promising performance on paper. When it was complete it turned out quite a successful type and was used subsequently in an aircraft carrier.

At these works in October, I saw the successor to the Camel, in the shape of a Snipe Fighter with a 200 h.p. rotary engine and twin Vickers guns firing ahead. This type, which came into service the following year, survived the war and did good work in Iraq as late as 1924.

On June 13th the Huns bombed London in broad daylight

with a formation of about 17 aircraft, and everybody was very annoyed about it as not one of them was brought down. However, a Zeppelin was bagged by a flying-boat off Terschelling on that day, and a week later I saw another come flaming down off Felixstowe. The regular night raids by German twin-engined Gothas started in September and went on intermittently through the winter. Whistles and bugles gave the alarm and all clear, otherwise the noise was much the same as it was twenty-five years later, though on a more moderate scale. Gradually the night-fighter pilots began to take toll of these raiders, but their task was a difficult one without the technical aids now available to them.

In August (1917) I heard the first talk of a Combined Flying Service, the name suggested being "The Imperial Air Service." Later it was confirmed that General Smuts had strongly recommended the formation of a separate service and that General Henderson was to organize it, but it was not until November that the Air Force Bill was introduced in the House of Commons.

CHAPTER VI

MALTA AND ITALY, 1918

I WAS warned in November 1917 that I should be required to take up an appointment on the Staff of the Naval Commander-in-Chief, Mediterranean. At that time German submarines were causing considerable losses to shipping in that sea. They were operating from Cattaro on the Dalmatian coast, which they used as a base, and two or three R.N.A.S. squadrons were already working from aerodromes in the south of Italy near Otranto, south of Brindisi. It was the intention to extend air activities against the U-boat, both in the Straits of Otranto and in the approaches to Malta and Alexandria as well as in the Ægean Sea.

I got permission to fly out one of the D.H.4 aeroplanes which had been allotted to the R.N.A.S. in south Italy. Having obtained delivery of this machine at Hendon, I gave it a trial flight off the waterlogged aerodrome with rather disastrous results. In approaching to land over the railway and sheds, I cut it too fine and stalled a few feet off the ground, bouncing the machine badly and swinging it into a searchlight. We piled up in a few yards and my passenger was badly cut about, but I escaped with a cut on the chin and some broken teeth. I was ready again within ten days and, with another machine of the same type, I left for Dover on a very cold December day shortly before Christmas. In a similar D.H.4, Squad.-Leader Reggie Leslie accompanied me on this trip bound for the same destination.

Next day we left Dover for Paris and reached Villacoublay, an aerodrome outside that city, in thick weather. From Pontoise onward I flew on a compass course above the winter ground haze for some fifteen minutes and came down through the murk right over the aerodrome. At Villacoublay I saw, for the first time, the wireless telephone working to a machine in the air. On Christmas Day we left for Vendôme, near Chateaudun, which was an R.N.A.S. Flying Training School commanded by Wing-Commander "Ratty" Chambers, an old friend of torpedo-boat days and now in the R.N.A.S. We enjoyed a very excellent Christmas dinner and left next morning bound for Lyons. The weather was very cold, in fact in all Europe the whole winter of 1917 was a hard one. There was snow on the ground and it looked as if there

might be more. I climbed above the clouds and for some time Leslie kept station on me till, past Blois and near Bourges, we ran into thick snow and lost each other. I held on for some time, but eventually visibility got too bad to continue. I put her down in two feet of snow and somehow remained right side up. The first arrivals on the scene were obviously Germans followed soon after by Chinese, and I discovered I had landed not in Germany or China but in a prisoner-of-war camp, and the Chinamen were part of the labour corps. I let the water out of my radiator and walked into Roanne, leaving a French guard on the aircraft. On the telephone I learnt that Leslie had landed not far away. Next day, in trying to start the motor, the water pump spindle fractured as the water inside the pump had frozen, and that necessitated spare parts from England. Time was pressing, I was carrying despatches for Malta, and so I completed my journey by train and boat. Before leaving I took the wings off the D.H.4, assisted by a Boche prisoner, who worked quite well on the job, and loaded it on train for the French aerodrome at Lyons.

To catch the Rome express I had to go to Chambéry, a very beautiful little French town in the mountains where the children were tobogganing on excellent snow. I promised myself I would go there some day for winter sports, but never got the opportunity.

The Admiralty had ordered some big Caproni triplane bombers with Fiat engines, and I went to Turin to see them. They seemed to me very clumsy-looking machines, and I much preferred the three-engined biplane which Caproni showed me with great pride.

Next day I arrived at Rome in brilliant sunshine, and I was warm for the first time that winter. What a lovely city, and though I had little time to explore it before leaving for Taranto by the night train I did look round St. Peter's very thoroughly with the help of a guide. Magnificent, especially the mosaic pictures, but even more ornate than Milan Cathedral. From an English paper I discovered that I had been promoted to Wing-Captain on the 1st January.

I reached Malta via Taranto, crossing over in the *Isonzo*, and reported to Commodore Burmester, Chief-of-Staff to the C.-in-C., Admiral Callaghan. My task was to discuss with Captain Scarlett, commanding the R.N.A.S. in Eastern Mediterranean, the air situation as it affected the Navy and to suggest plans for the future. It was a difficult problem with shore bases so widely separated and the range of aircraft so very limited, and it seemed

to me that the most effective concentration of effort should be against the U-boat bases in the Austrian ports of the Adriatic, and Cattaro in particular. The C.-in-C. agreed to the policy recommended, and I returned to England before the end of January to get Admiralty approval and to learn from the Air Board what prospects there were of obtaining the necessary aircraft and equipment with which to carry out the plan.

At the Hotel Cecil, which by now was changing from Air Board to Air Ministry with Lord Rothermere as Secretary of State for Air, I found that Sir Hugh Trenchard had become Chief of the Air Staff and that other changes were taking place as the new service shaped itself. Having obtained general approval from Admiralty for the Mediterranean air plans and a promise from the Air Ministry for supply of aircraft, I left England again on the 8th February. On my way through Paris I visited the Allied Supreme War Council, whose headquarters were in a magnificent building at Versailles, the Trianon Palace Hotel, but General Sykes, whom I had come to see, was away. However, I got from Colonel Armes a fairly complete picture of the general situation which, at that moment, might be described as the calm before the storm. The Germans' last offensive in March 1918 was about to start.

The next three months I spent mostly at Malta, with visits to Rome, Brindisi, Otranto and Taranto to arrange for the new aerodromes and accommodation required for the expansion of our air activities, also the linking up of their operations with the British naval Otranto anti-submarine barrage, the Admiral commanding the British Adriatic Force and the Italian Naval Air Service.

At Malta, there was an excellent seaplane station situated at Calafrana, where the 320 h.p. Sunbeam Shorts operated on local anti-submarine patrols. The F.3 flying-boats were under construction in the dockyard, and for this work the Maltese were found to be excellent, as was to be expected from such expert boat builders.

Maltese airmen were under training as ground crews for the new service shortly to come into existence, and Lady Methuen, wife of the Governor of Malta, was energetically supervising the training of Maltese women as fabric workers in connection with the construction of the F.3 flying-boats. The Maltese were certainly playing their part well.

Taranto, the Italian naval base, was a hive of British activity.

It was the port from which the fast convoys of big ships, which included one or two of the P. & O. and Orient liners, sailed for Alexandria, their normal escort being Japanese destroyers. There was a large military transit camp for both Middle East and Salonika. Pizzone Air Station accommodated the airmen for both the seaplane station and the repair and erection base.

Brindisi was the home of some Italian cruisers and of many small Italian flying-boats as well as of our own light cruiser force under Admiral Howard Kelly in his flagship *Lowestoft*. At Otranto, we had a seaplane station and an aerodrome.

In March the bad news of our retreat on the Western Front was most depressing. I heard of it during one of my visits to Italy, and I can remember an Italian officer endeavouring to console me by saying that all the best armies had to retreat some time, just as the Italians had had to at Caporetto in the previous October. It was difficult to make a suitable retort to that one without offending an ally.

On April 1st the R.A.F. came into being and I became a Lieut.-Colonel, R.A.F., instead of a Wing-Captain, R.N.A.S. The naval C.-in-C. at Malta didn't quite understand it at all. I was able to reassure him, however, that the work, so far as we were concerned, would go on just the same, and I explained that the main reason for the change was the realization that the air could achieve something more than merely act as an ancillary to the Navy and Army.

Soon after the formation of the R.A.F. we heard of changes at home. Sir William Weir took Rothermere's place as Minister and Sykes relieved Trenchard on the latter's appointment to command the Independent Air Force in France. In May, Vyvyan, late a Captain R.N. and whose new rank at that particular time I cannot recollect, took over from me at Malta as Commander of the R.A.F. in the Mediterranean and I went in Command of the Adriatic Group R.A.F., with headquarters at Taranto.

During the last part of my time at Malta, I lived at 20 Molino Vinto, the charming house of Commodore and Mrs. Burmester, and I was sorry to say good-bye to my host and hostess who had looked after me so well. Indeed, life at Malta was almost too comfortable, for one could still play polo, go to the Opera, and get plenty to eat and drink at the Malta Club.

I was already *au fait* with the Adriatic Group which, by now, had expanded to two wings. No. 66 Wing with headquarters at Otranto, consisting of No. 223 Squadron with 12 Short seaplanes,

Nos. 224 and 225 Composite Squadrons, each with 12 D.H.9 bombers and 6 Camels. No. 67 Wing at Taranto had No. 226 Squadron of 12 D.H.9 and 6 Camels, as well as No. 271 Squadron of seaplanes. Our work continued to be primarily against the submarine, but with an occasional diversion in support of the Italian Army in Albania, which was operating against the Austrians on a front just to the north of Valona.

I took over the group from Robin Ross, and I found a strong team of officers, many of whom I had known before. Among them were Richard Peirse of No. 67 Wing, Douglas Oliver of No. 66 Wing, Hope Vere, Edmunds and Beuttler. Others I can remember included Reggie Leslie, Hardman, Victor Croome, a fine formation leader, John Morrison, as good a squadron commander as he was a golfer, Ruault, Panter with one arm, Dunn, Layard, Hinshelwood, Redfern, Bolton, Jeakes, Hodgson, Stoneman, Brockbank and Parrett, my efficient secretary.

As I have explained, Taranto harbour contained the major portion of the Italian Fleet. The inner harbour where they lay was connected to the outer by a narrow canal over which there was a high swing bridge. The Italian admiral of the port, Acton, had issued stringent orders that no aircraft was to fly over his bridge or canal under 6,000 feet. One morning I was standing close to the bridge talking to the Admiral when I saw a flight of Camels approaching in line astern. To my consternation they came roaring down and flew, in succession, under the bridge right in front of our noses. After recovering from our annoyance at this bare-faced effrontery, we both laughed. He said he would now have to alter his orders to forbid flying under as well as over the bridge, and I promised to direct the enthusiasm of these high-spirited lads to more profitable tasks.

The Italian naval Chief-of-Staff in Rome, de Reval, and his head airman, de Filippi, gave me every assistance and support in sanctioning new aerodromes and in the accommodation for my officers and airmen. On the other hand, any form of combined operation with the Italian naval fliers was difficult to arrange, as they just could not keep a date. Eventually, after much discussion with Admiral Cusani at Brindisi, I was given a free hand to plan our bombing offensive against the Austrian ports on the Adriatic coast without having to notify the Italian Command on each occasion. Admiral Howard Kelly supported me in this matter and, indeed, in all negotiations with the Italians, from whom he seemed to have an uncanny knack of getting exactly what he wanted.

It was Italy's intention to finish the war with as many big ships intact as possible; they would be a measure of her greatness and they were not to be employed on dangerous expeditions. Care was taken, therefore, to appoint cautious admirals, and Cusani was one of them. Later, when the Armistice came, he was immediately replaced by a fire-eater to enforce the Armistice terms and subsequently to make much fuss at Fiume, the bone of contention between Italy and Jugo-Slavia at the Peace Conference. On the other hand, there is no doubt that the Italian small craft were handled with skill and determination on many occasions during that war.

The bombing raids on German submarines in Cattaro meant a flight of over 100 miles across the sea. This does not sound very hazardous in these days, but it was far from a joy ride in those heavily loaded single-engined D.H.9 aeroplanes. They had no fighter escort to deal with the Austrian fighters, some of which had been moved from the northern front to deal with this new deterrent to German submarine activities. Only towards the end was it possible for the Navy with some fast destroyers to arrange escort sweeps towards Cattaro to synchronize with the bombing operations. The task was important, for there were usually seven or eight submarines undergoing repair, refuelling or resting in that wonderful harbour, and Mediterranean sinkings were serious.

My main headquarters were at Taranto, but I spent much of my time at Brindisi, living on board *Blenheim*, the parent ship of the destroyer flotilla. Captain George Chetwode was my host, I had very comfortable quarters and was well looked after by a most efficient Maltese staff. There is a great advantage in being near the commander of another service with whom one is working: difficulties are ironed out more rapidly by discussion, and operations can be planned without delay. The *Blenheim* was moored close to Admiral Kelly's flagship, and I was constantly on board the latter.

Two excellent Italian liaison officers were attached to my group, Vittorio Baisini of the Savoia Cavalry, and a wartime officer, Prevé, who came from Genoa. Baisini was on my staff and he brought with him two good horses; in the early mornings at Taranto they provided all the exercise needed in the heat of southern Italy during that summer. On one visit to Rome, a cavalry friend of his lent me an Olympia show jumper for a ride outside Rome in country with very solid stone walls alternating with sizeable post and rail fencing. The young officer led me

straight across country, jumping anything that we met, and I have seldom enjoyed a ride more. He took us over the best of the country outside Rome, which is hunted by a well-known pack of hounds.

After the war, Baisini came to England regularly every year in connection with his business as an international lawyer, and we almost invariably met. Every Christmas I received from him a decorative Christmas card, and on the last one I got from him for Christmas 1939 was written, "May we meet once again in happier times when the world comes to its senses." I hope we shall.

My batman, Baker, was an interesting character. Small and insignificant looking he was not only an excellent valet but an exceedingly good cook. During a particularly rough passage in a destroyer from Brindisi to Malta I was feeling none too well and was sitting aft on the searchlight platform rather wishing for death when Baker appeared and quite cheerfully asked how I felt. I gave a fitting reply to such an unnecessary question and asked him in return why he wasn't ill too. He replied that he had been a bar steward in the *Mauretania* for the past ten years and that this sort of motion was nothing to him. When, later, the time came for demobilization, I asked him what he was going to do, rather in the hope that he might stay on with me in a private capacity; but no, he was going back to his old trade where, as he said, "the emoluments were by no means insignificant."

In some parts of southern Italy, malaria is bad, and one of our aerodromes was too close to a marsh to make it a very healthy place. We moved the aircraft and personnel to another site for the autumn when the mosquitoes are at their worst but left two or three Bessonneaux hangars erected and some unserviceable machines pegged out as decoys. No sooner had we made this move than the Austrians started to bomb this deserted site and continued to do so frequently. As caretaker we engaged a deaf Italian who slept peacefully through the raids and only assumed there must have been one the previous night by the extra bomb holes which he could count. An arrangement satisfactory to both parties, but one which would have been disappointing to the Austrians had they known.

General Ferrero commanded the Italian forces at Valona, a fine port in southern Albania. In July the Italians decided to stage an offensive and asked for British air support: I was only too ready to give it in order to provide a welcome change for the bomber pilots who had continued to operate against Cattaro, and not

without losses. These losses were not confined to enemy action alone but were occasionally due to an aircraft crashing on the cloud-covered mountains which surrounded the harbour.

For their offensive, the Italians needed fighters, and as we had no formed fighter squadron, the pilots and ground crews for the Camels had to come from a bomber squadron. One bomber and one fighter squadron flew over to Valona and quite dominated the air on that small, out-of-the-way front. The Italians were particularly pleased at the destruction, by one of our bombers, of the centre span of an important bridge which the Austrians were using to bring up reinforcements.

In the absence of fighter opposition, the Sopwith Camels were used for low machine-gun attacks on enemy camps and supply lines, a very refreshing interlude for bomber pilots who found no difficulty in handling the lighter and more manœuvrable fighters. Though the Italians made some progress in the opening stages of this offensive, which I watched from my D.H.9, the attack fizzled out, and after a fortnight the front returned to its normal state of quiet. With the exception of a flight of Camels which I left over there to encourage the Italians, the remainder of the R.A.F. returned to Italy and resumed their normal task of raiding Cattaro submarine base.

On my way back from Valona, I motored to Santa Quaranta over a mountain road which the Italians had constructed to that port which lies opposite the island of Corfu. Like most Italian mountain roads, this one was a very good engineering feat, and there was evidence on all sides that the Italians intended to stay in Albania after the war. The port of Valona itself was well developed with piers and storehouses, and Italian schools had been started in the villages. It was a disappointment to them that the Peace Treaty only gave them a tiny little island, Saseno, off the entrance to Valona, and the rest went back to the original owners.

From Santa Quaranta, I crossed to Corfu in an M.L. (motor torpedo-boat) to visit a kite balloon station which supplied K.B.s to the drifters and other small craft of the Otranto anti-submarine barrage. The barrage had nets and every sort of device for dealing with these U-boats, and the man-carrying balloons were to watch out for the latter. Corfu was very gay as the French Fleet was there and also some American torpedo-boats which were working with our Navy on the barrage. These cheery Yanks introduced me to their game of baseball, which I played with them on the beach in bathing kit but with a tennis ball instead of the hard variety.

I had a short spell of leave in July, during which I was able to see my family for a few days at Witley Manor. I found petrol as well as food rationing in force and pony carts the order of the day, for they were easy to buy a generation ago. My wife was in the fashion, and kept tame rabbits, but apparently an old and cunning cat had taken a toll of the tiny ones before he was apprehended in the act. Daughter Janet rode a donkey with zest, and Boy Dick was no longer a baby: I was glad to have a day or two with them; they were four and three years old respectively, and children are fun at that age.

On October 2nd 1918 the battle of Durazzo was fought, though few people have ever heard of it: in fact, I should not call it a battle at all, as will be seen from the following description of it. For some time Admiral Kelly had been encouraging the Italian Navy to do something enterprising in the Adriatic, and his efforts had, at last, met with some success. Durazzo, on the Albanian coast opposite Brindisi, was to be bombarded by sea and air, as a combined operation. I prepared my time-table for the bombing effort, and having thus set the picture went on board *Lowestoft* at the invitation of the Admiral to see the show.

We left Brindisi harbour with British light cruisers *Weymouth* and *Dartmouth* and four destroyers. Destroyers *Shark* and *Tribune* went ahead as a screen, *Glasgow* and *Gloucester* with Italian light cruisers steamed to the north to watch for any signs of the Austrian battle cruisers coming out from Pola. Italian battle cruisers *Pisa*, *San Giorgio*¹ and *San Marco* were in covering support. Added to this Armada there were American submarine chasers and Italian motor torpedo-boats.

Durazzo is a small port, and by the time we had reached it my bombers had set one or two fires going. Watching from the bridge of *Lowestoft*, I saw our first salvo from the three cruisers hit the area of the jetties, with some ships alongside. I was waiting for the second salvo when a goodly explosion happened somewhere astern of us. Then hell seemed to be let loose with depth charges exploding all over the sea and shells of all sizes flying in every direction. A "Fritz" U-boat had quietly stalked the cruisers from the seaward side and had blown half the stern off the *Weymouth*, including the rudder. Everyone claimed that they had sunk the submarine; in fact, judging by the claims of the American submarine chasers, they must have bagged more than one.

¹ The *San Giorgio* was sunk by the R.A.F. at Tobruk in 1941.

The Italian cruisers returned to Brindisi without delay whilst the *Lowestoft* and *Dartmouth* were left to escort the *Weymouth* home at 10 knots, which was all she could make with no rudder and a twisted stern. Whilst we were waiting for *Weymouth*, I saw a fine duel between *Shark* and *Tribune* on the seaward side and two Austrian destroyers of the *Huzzar* class steaming up and down at full speed in Durazzo bay, inside the minefield. Both pairs were firing rapid salvos at about 8,000 yards, but the speed and alterations of course were too much for the gunners on either side. As our destroyers could not close the range any more because of the minefield, they were called off to escort our slow procession home. Nobody seemed to worry much about the Durazzo shore batteries whose 5.9-inch guns were dropping shells consistently short of our ships by about 200 yards. It was not a very glorious action and I think the honours were slightly in favour of Fritz. However, our aircraft had played their part; thirty-one had got there and altogether five tons of bombs had been dropped in the target area.

Approaching Brindisi that evening we saw the Italian cruisers still off the entrance, and they waited till *Lowestoft* led the way in through the swept mine channel. We suspected that the Italian Fleet Navigation Officer had forgotten which of two was the swept channel for that day, and did not like to ask by signal from his port authorities.

By the first week or so in October, victory over the Austrians was in sight, and both Bulgarians and Turks were cracking. On October 7th the Italians in Taranto started flag-waving on a rumour that Austria had collapsed, but the report was premature.

One of my bomber squadrons, No. 226, was ordered to Mudros to reinforce the bomber offensive against Constantinople. It was commanded by Reggie Leslie, and I arrived at Mudros at the moment this squadron, led by its C.O., was returning from a raid on the Turkish capital. As the leading machine was gliding in with its engine throttled down, I heard a tune coming from the sky which turned out to be a mouth organ and a drum played by Leslie and his light-hearted observer, Chase. It spoke well for the moral when these aircrews found energy to play such tricks at the end of a five-hour raid.

Spanish influenza had begun to take a heavy toll of personnel at Mudros, as it did in many parts of the world during that winter of 1918. When walking round the R.A.F. camp, I came across an

airman with a measuring stick, and when I asked the man what his job was he replied that he was an undertaker by profession and since lots of coffins would be wanted he was mentally measuring any particularly sickly looking airmen he saw about. A morbid story, but four years of war had produced a crude outlook on life in general.

On the way back from Mudros I visited Salonika where an R.A.F. wing was operating with the British Salonika Force, but the Bulgarians were on the point of cracking and it was practically all over bar the shouting. I travelled back by the very complicated line of communication which entailed a train journey from Salonika to Bralo via Larissa, car or lorry to Itia, in the Gulf of Patras, on a fine road built by the Royal Engineers, and thence by steamer to Taranto. This roundabout route was for the purpose of shortening the sea passage and avoiding the Ægean, which was a favourite hunting-ground of the U-boat.

On November 1st came news of Turkey's capitulation and on the 4th the Armistice with Austria was signed. The German submarines were no longer using Cattaro and our work was done. I do not think that, even then, we realized how soon Germany would collapse; for I can remember how we pressed for our remaining squadrons to go to France. However, it was not to be, and November 11th arrived with its epoch-making order to Cease Fire.

On that particular day, I was shooting snipe with some of my officers in a marsh some miles away from my headquarters at Taranto, when a despatch rider arrived and announced the good news. We hastened back to camp, as it was obvious that some celebration of the event would be expected and I was anxious that it should take a harmless form. As an alternative to beating up the town of Taranto and perhaps some of its inhabitants, we directed the energies of the young officers and airmen to building a colossal bonfire. Into it was stacked obsolete equipment, a Tin Lizzie Ford and some naval pattern flares. The distraction was a great success; the bonfire continued to burn all night and to explode at intervals; no one was hurt; there were no incidents with the Italians, and the town remained intact.

Adriatic Group R.A.F. had done their best, within their limited capacity, to interfere with the operations of the German U-boats, and twenty-five tons of bombs had been dropped on their bases. The seaplanes had kept up anti-submarine patrols over the Otranto barrage, had escorted convoys to the limit of their

endurance and had done all that the Navy asked of them. It had been a pleasure to work with Admiral Howard Kelly and to have served under Major-General (later Air Vice-Marshal) Vyall Vyvyan, my A.O.C. at Malta.

CHAPTER VII

DEMOBILIZATION, RECONSTRUCTION AND A STAND-EASY

A VERY difficult period followed the signing of the Armistice on November 11th. Both officers and men were anxious to get home as soon as possible. It was no easy task to keep them sufficiently occupied with work and recreation until transport could be arranged to take them on the long train journey, through Italy and France, to Cherbourg for embarkation to England.

I visited Rome on November 15th to arrange the transfer of our accommodation and aerodromes to the Italian authorities, and it was during this time that I saw signs of friction between the Italians and French, already brewing over the future frontiers and allotment of territory. There is no doubt that the Italians hoped for Corfu and some portion of Albania, as well as the naval port of Fiume. They had to be content with the small island of Saseno off the entrance to Valona which was more suitable for a flock of goats than for human beings.

Early in December I received orders to report to Air Ministry, and I reached England on December 11th to find that my services were required on various reconstruction committees which were to discuss and recommend how the post-war R.A.F. was to be officered, manned, trained, dressed and paid.

This was an interesting prospect but, as the policy of the Cabinet had not been decided in regard to the strength of the permanent R.A.F., the Committees had not started to function and I was therefore able to obtain some leave, which I spent at Witley Manor with my family.

I returned to London before Christmas to find that the fate of the Royal Air Force was hanging in the balance and that, according to the Press, it was quite on the cards that we should be absorbed by the Army and Navy respectively. However, this disaster did not occur and, after a most cheerful Christmas party at Witley, I started work as a member of the Reconstruction Committees.

One of these had to deal with the selection of officers for permanent commissions. As a first step 2,000 were to be chosen out of some 6,500, and it was necessary to go carefully through

DEMOBILIZATION AND RECONSTRUCTION

such records as were available, on their qualifications. I hope we chose wisely and, judging by results in later years, I think we did, but naturally enough there was much disappointment for those that were left out.

The entry and training of officers was dealt with under the chairmanship of Brig.-General Tom Webb-Bowen. Discussion centred principally round the question of fixing the age of entry. After comparing the relative merits of the early age, as adopted by the Navy, and that of the Army in the case of Sandhurst and Woolwich, we decided in favour of the latter (17 to 19), which gave longer time to obtain the benefit of a public or secondary school education, as well as costing less to the State. We also recommended the entry of a limited number of candidates from the Universities, Engineering Colleges and Mercantile Marine in order to obtain the benefit of their higher education and experience.

Our recommendations went on to include provision for the two years' training of officer cadets to be done at a special college to be opened for the purpose, for which Cranwell was, later, selected, and training commenced there in 1920. We considered most necessary a system of seconding officers between the Navy, Army and Air Force in order to spread the knowledge of all three services throughout each of them. In principle, this was accepted, but the Navy was particularly reluctant in sparing any personnel for attachment to the R.A.F.

We visualized that specialization should take place in one or other of the technical branches after an officer had spent two or three years in a service squadron and that, at some stage, selected officers should go through an Air Staff College. For medical and pay services we recommended separate branches.

On the assumption that commercial aviation would, before long, require a steady intake of pilots, we recommended that the training of these should be done, in a one-year course, by the R.A.F. and that subsequently a proportion of them should be retained for short periods in the service, the remainder to pass on to civil air employment whilst remaining on the reserve of the R.A.F. for a period of years. In actual fact, it turned out that the limited needs of commercial flying were met, for many years, by the R.A.F. pilots demobilized after the war. However, a short-service scheme was introduced in which pilots served for four or five years on the active list and subsequently on the reserve. Provision was also made, on a generous scale, for training men

from the ranks as pilots, and for commissioning a proportion of them as officers.

Pay, allowances and pensions were considered by another committee of which I was a member. On this subject, I was not in agreement with the rest of my colleagues, some of whom were civil servants, and I put in a minority report recommending higher rates than those put forward in the main report. I am happy to think that the rates, as finally accepted, were not far short of those I had suggested. Incidentally, we were still using Army titles in the R.A.F. and it was not until August 1st 1919, that the new ranks were introduced, when I received a fresh commission as a Group-Captain in the reconstituted R.A.F.

Lord Hugh Cecil presided over another committee, which dealt in some detail with the education of candidates for the R.A.F. From the time I left the naval crammers at the age of fourteen, my education had been almost entirely confined to subjects directly connected with my service duties; in fact I had had a utility education. Listening to Lord Hugh at our meetings, I became aware of how much I had missed in not having had a more general education such as is provided by the public school system and, later, by the University. I had gained much that was of value to me in my early career in the Navy and R.N.A.S., but I had missed much that would have been of the utmost value to me later in life. Our Committee took good care to recommend a suitable compromise for the education of the future R.A.F. officer.

An analysis of particulars relating to some thirty-seven officers who held the rank of squadron-commanders at the cessation of hostilities and were applying for permanent commissions in the R.A.F. revealed the following facts: their average age was twenty-eight years—between them they had been awarded one V.C., one O.B.E., six D.S.O.s, seventeen M.C.s, three D.S.C.s, five A.F.C.s, eleven foreign decorations and twenty-six mentions in despatches. Thirteen had been to public schools—eight had come from commissioned ranks in the Army or Navy—one had come from the ranks of the regular Army, and the pre-war occupations of the others included engineer, planter, solicitor, Merchant Navy, fruit-grower, commercial traveller, assistant manager in the leather trade, and a clerk. This analysis was of value; it showed that we could throw the net very wide in emergency, but how wide and how successfully we were not to realize fully till some twenty-two years later.

Our deliberations on the future clothing of the service for

officers and men were interesting and at times amusing. One cannot make or mar a fighting service with a uniform, though it may well be possible to do so in the case of Women's Auxiliary branches. We had many patterns made up for our consideration, in one of which I duly presented myself at Buckingham Palace for the inspection of His Majesty King George V. The rôle of mannequin was a new one to me, and my comfort was not improved by an exceedingly tight pair of black field boots, which were considered necessary for our smart and military appearance. I fear that our recommendations suffered many vicissitudes before the design was stabilized in the form which was eventually adopted. In our defence, I may say that we were not responsible for the full dress hat, the design of which started with the motif of a fur flying-cap and which developed into something quite unique and unsuited to a large majority of its wearers. No wonder women have such difficulty in selecting the best type of hat to suit their beauty.

My mention of boots reminds me of another occasion at Buckingham Palace when I received my D.S.O. at an investiture. On this occasion I discovered to my discomfort that they squeaked. My wife, who accompanied me to the Palace, said it would be all right because the orchestra would drown any such noise during the ceremony. The time approached for me to pass before His Majesty; at that moment the band stopped playing and there was complete silence, broken only by the infernal squeaks of my boots as I walked away after having duly completed my part of the ceremony.

On February 12th of this year (1919), General Sir Hugh Trenchard became Chief of the Air Staff, a post he was to hold for ten years. Other changes included the appointment of General Sir Frederick Sykes as head of the civil aviation side. General Sir Godfrey Paine remained Inspector-General; Mr. Winston Churchill continued his dual function of Secretary of State for War and Air which he held until 1921. Soon after his appointment, Trenchard went down with influenza, from which he took some time to recover. This winter epidemic was still continuing but was getting less violent as the spring arrived.

On May 5th I took over No. 1 Group R.A.F. whose headquarters were in Dover Street. I had the depressing task of disbanding unit after unit within my Group, and the rate of demobilization can be judged from a comparison of the strength of the R.A.F. at the time of the Armistice and two years later.

In November 1918 we had over 200 squadrons, 22,500 aircraft of all types, of which some 3,000 might be regarded as "first line," 103 airships of all shapes and sizes and a personnel of over 290,000 officers and men. By November 1920 there were no more than 26,000 officers and men and there was a corresponding reduction in the number of squadrons and aircraft.

During the summer, family affairs claimed much of my attention. Our third child, William James, was born on May 6th, and two days later my father-in-law died. With the passing of this fine old man, who for years had served his country unostentatiously in the India Office, I lost a firm friend and adviser.

The Headquarters of my Group moved in rapid succession to Thurloe Place, then to Croydon and finally to Kenley, by which time I had had enough of demolishing the structure which I had helped to build up for the past eight years. I applied for half-pay, which was granted, but with no guarantee that I should be employed again; however, I took that risk and turned over my Command to Brig.-General Becke on October 11th. As one of the original R.F.C. pioneers the latter must have felt the same lack of enthusiasm for the task of reducing the service, and he very soon departed to his home in Scotland, where I saw him from time to time in later years.

Having completed the business involved in disposing of Witley Manor and in moving to Lennox Gardens, my wife and I decided on a tour of the battlefields in France. We took the car over in late October and explored from Compiègne to Zeebrugge and Ostend. What impressed me most was the astounding thoroughness of the German in many directions, evidence of which was still showing even after the twelve months which had elapsed since the Armistice. The big long naval guns behind Ostend which had shelled Dunkirk were still in position and complete in their turret mounting. The Belgians, always with an eye to business, were charging an entrance fee into the enclosure surrounding the gun and were selling mementoes.

What interested me most, however, were the submarine shelters at Ostend which protected the U-boats from bombing. The overhead protection consisted of concrete in considerable depth. The *Vindictive* was being salvaged at Ostend and the *Iphigenia*, *Thetis* and *Intrepid* at Zeebrugge. I could appreciate the magnificent effort of the Navy on April 23rd 1918 by the position of these ships in the blocking operations.

Outside Ypres, particularly at St. Julien, there were scores

of derelict tanks, a grim reminder of the price we had to pay for our offensives against the German before he finally cracked. At Dunkirk I visited the old haunts and lunched with Sarel, the Consul, who was still there. We crossed, on the return journey, with the Queen of Spain, who was paying one of her periodical visits to England. I notice, from my diary, that the whole trip, lasting fourteen days, for my wife, myself and driver Parker, cost £106.

Towards the end of November I took a small furnished house at Sherborne in Dorset and settled down to the serious business of fox-hunting with the Blackmore Vale Hounds under the Mastership of Wingfield Digby of Sherborne Castle. Hunting talk, like golf or fishing talk, can be very boring to those who are not bitten with the same microbe. Even if they happen to be so inflicted they must know the country, golf links or water to enable them to appreciate fully the story told. It is for this reason I will spare my readers a detailed description of the very pleasant hunting season which I spent in that sporting country of banked fences and deep-going. I met many old friends, including "Jor-rocks" Jackson of North Cheriton, in whose company I had made my decision to volunteer for flying nine years before. The Blackmore Vale Hunt was noted for its friendliness, and I thoroughly enjoyed my season with them down there.

Time passed quickly and in the middle of January (1920) Air Ministry asked me whether I was prepared to go to Bulgaria to supervise the implementation of the air terms of the Peace Treaty. I was unlikely to be required for this duty before May at the earliest and I agreed to the proposal. A few weeks later I was recalled to Air Ministry, restored to full pay and sent off to Paris to find out details of what my task was to be in Bulgaria.

I found that I should not be needed to start for some time, so I returned to Sherborne and finished the season there by riding one of my horses in the nomination race of the local Point-to-Point. It was my first attempt and there were some very experienced riders, so I was pleased with myself and my horse, Alfred, in coming in third out of a biggish field.

The departure of the mission to Bulgaria was delayed from month to month and it was not until August that I finally left England. In the meantime I spent a very pleasant summer at Bembridge in the Isle of Wight with my family in a comfortable furnished house we had taken for the purpose.

Bembridge had the advantage of providing amusement for

grown-ups as well as for children. There was an excellent sandy beach, where children up to any age, some over fifty, could please their fancy in the matter of sandcastles, go shrimping with a special net or look for slimy treasures amongst the rocks. The grown-ups, if members of the Sailing Club and Garland Swimming Club, could race in the one-design club boats, go swimming if they were sufficiently hardy to endure the cold water of the Solent, and dance or play bridge in the evening. It was a pleasant existence and I had great fun with my children during this holiday, the longest I have ever had.

I paid occasional visits to London to hear the latest news about my Bulgarian Mission and on one of these occasions attended a dinner given on July 12th to the survivors of the first hundred British aviators and the pioneers of British aviation. My pilot's certificate, number 72, qualified me to attend as a guest and I remember a remarkable speech by Mr. H. G. Wells, who foresaw that the great obstacle in the way of European civil aviation would be the restrictions imposed by sovereign states which, he thought, were too small for modern aerial transport. "Unless matters could be eased by setting up some super Government to secure free right of way from end to end of Europe, the fair promise of aviation and of our civilization was likely to be stifled." This might well have been said in 1945, in any discussions on the future of air transport after the Second World War.

By 1920 life in England was getting back to normal and the London season had almost its pre-war round of debutantes' dances, livery banquets and the Eton and Harrow match at Lords. At Wimbledon I saw Suzanne Lenglen win the ladies' tennis singles; she was a treat to watch, and I have not seen anyone since to equal her for sheer grace of movement on a tennis court. At the theatre and for dinner-parties the tail coat and white tie were again worn, after having completely disappeared during the war. The First World War had been an ugly incident but not one to make any lasting impression on our customs or habits.

In August my stand-easy was over and I went back to duty.

CHAPTER VIII

BULGARIA, GRANTHAM AND CAMBERLEY

WITH the high-sounding title of "President of the Inter-Allied Air Commission of Control in Bulgaria" I left for that country on August 12th (1920), stopping *en route* in Paris to obtain from the Allied Supreme Council details of the task ahead. An inventory had to be made of all aircraft equipment and hangars remaining in Bulgaria. Each of the Allies could take their portion of such equipment if they so wished, but were not to dispose of it subsequently to any other State. If they did not require their quota, it was to be destroyed.

My staff included Squad.-Leaders Reggie Leslie and Daly and the other delegates were Colonel Menard and Captain Poupon from France, and an Italian who appeared on the scenes late and started to quarrel with the Frenchmen. Last, also least, a Japanese who regarded the business as a complete joke. Luckily none of the Allies concerned wanted any of the few aircraft to which they were entitled, so the job looked like being a comparatively easy one.

The Orient Express wandered leisurely by way of Venice, Zagreb and Belgrade and the journey was enlivened by my humorous friend Leslie, who, at one stage, decided to view the countryside from a position above the cow-catcher in front of the engine. I thought we had left him behind at some wayside station in Jugo-Slavia, but no, he was making a royal progress waving to the peasants in the fields on either side of the track from his precarious position; the engine driver seemed to enjoy the fun. His progress was not so regal later when he changed his position to one on top of the front coach and soon after met a long tunnel, from which he emerged completely black.

Most of the railway bridges in northern Italy and Jugo-Slavia had been hastily reconstructed in wood and they creaked and groaned in a most alarming fashion as we passed over them at slow speed.

Sofia was thoroughly overcrowded, a large Military Mission had already arrived and taken up most of the available accommodation. It was a day or two before we got rooms in a reasonable, hotel, the Union Palace. The Minister was Sir Herbert Dering, assisted by Francis Rodd (now Lord Rennell). General de Fortou

of France was president of the Military Mission, which was faced with a far more difficult task than either the Air Mission or the naval one under Captain Snagge, R.N.

We were all drawing very large allowances at the expense of the Bulgarian Government, which more than covered living expenses, and I felt that it was up to us to get through with the job without delay. General Neresaw, the Bulgarian Army Chief, appreciated this attitude and gave me a full and complete list of all air equipment and hangars. The Prime Minister's special railway coach was allotted to us, and, with the two Frenchmen Menard and Poupon and a Bulgar Colonel Popkresteff, we started off on our tour of inspection.

At Yamboli, we saw the airship shed from which a German Zeppelin had made a notable flight right across Africa to contact General Von Lettow, the German Commander in East Africa.

At Burgas and Varna on the Black Sea, we located a few obsolete seaplanes and at Rustchuk, on the Danube, nothing at all but a fine lot of geese, of which we shot two. Poupon and I had to wade after a wounded one, an undignified proceeding when in uniform with a tunic but no trousers; we got the goose. The Frenchmen were a grand pair; Menard had escaped from a German prison during the war and had walked 200 kilometres to the Swiss frontier, and Poupon had served in the cavalry and later as a fighter pilot. Both of them were keen on shooting and the latter spoke perfect English, besides being a very good tennis player.

On the Danube we saw barges from all parts of Europe including one or two from Brussels and Antwerp. International barge traffic on the European canal systems had started again; the Danube section was under the control of Admiral Troubridge at Budapest.

Back in Sofia we found life quite gay with various entertainments, tennis parties, dinners and dances. I was provided with a horse to ride, being frequently accompanied by Francis Rodd of the Legation. An American, Brewster, representative of one of the big oil companies, kept open house and both he and his wife were very hospitable.

I had an audience with King Boris III, who talked for some time on aviation. He seemed to me rather a pathetic figure, small and insignificant looking; he was practically a prisoner in his small palace, the political situation being in its usual state of eruption. His father, Tzar Ferdinand, must have been a far more impressive

personality and he had certainly made some effort to tidy up Sofia. There were signs of this in the centre of the city where houses, hotels and offices were of modern construction, but outside this core of comparative cleanliness was the mediæval squalor of ancient days. One must remember that for four centuries the Bulgars had been under Turkish rule and their independence had not been recognized by the Powers till 1909.

Ferdinand had also been responsible for the one and only motor road which led to the royal shooting lodge some miles from the Capital. It was a pity that, in the First World War, Ferdinand joined the wrong side and that Boris had to follow suit in the second. The Bulgar is not a bad fellow and seemed to me preferable to a Roumanian.

During a picnic in the forest not far from Sofia one afternoon, we saw a whole contingent of gypsies on trek. It was a colourful sight for they were dressed in their bright clothes and both young and old were on ponies or leading pack-animals. Wheeled vehicles were of little use to these Romanys who know no frontiers and cross from one country to another by paths and tracks known only to themselves. This lot were real gypsies and bore little resemblance to the British tinker variety that moves about in rather dilapidated caravans.

Having been denied the right of maintaining conscription by the terms of the Peace Treaty, the Bulgarian government had brought in a law for compulsory work, applicable to men of twenty and girls of sixteen. The objects aimed at were the social reorganization of the State, development of patriotism and the economic relief of the population. The work included the repair of roads, railways, aqueducts, the draining of marshes, working of telephones, telegraphs, work in the mines and the staffing of hospitals. Duration of service was twelve months for men and six months for girls and during that period the State fed and housed them. It certainly seemed to me a scheme which had its good points and one which might well be considered in our own country.

It had not taken us long to find out exactly what aircraft and equipment had to be dealt with. All of it was assembled at Bojournishte aerodrome, close to Sofia, and the work of destroying the airframes and engines was done by the Bulgar mechanics themselves under our technical supervision. By October 1st the debris was ready for our inspection and I must say that it was a grim sight to see Fokker D.VII fighters cut into small pieces: Mercedes

Benz engines looked too good to be oozing oil from smashed crank-cases. I walked round the wreckage and passed the work as having been satisfactorily carried out in accordance with the terms of the Peace Treaty. Colonel Popkresteff then invited us to lunch in the officers' mess, but as we had just destroyed the means of livelihood of the Bulgar pilots, I felt that such a function would be rather embarrassing. They all insisted, so we drank their health in some peculiar wine and took our departure. They seemed to bear us no grudge and gave the impression that they realized their mistake in backing the wrong horse.

Hardly twenty-four hours after the inspection of the wreckage, instructions came from Paris to the effect that the French quota of aircraft was to be handed over to the White Russians who were continuing their resistance to the Bolshevik regime in the Crimea under General Wrangel. I replied that the destruction of the aircraft had already been effected in accordance with the Treaty and added that, in any case, there were practically no aircraft which would have been of any value to the White Russians. At a subsequent meeting with General Weygand in Paris, he asked me why I had been so quick in carrying out my mission in view of the fact that we were receiving such high allowances at the expense of the Bulgar and that the Military Mission looked like being there for another 18 months. I replied that a winter in Bulgaria had no special appeal for me, even at the expense of the Bulgar, and that I wanted to get back to some useful work in my own service, perhaps also to some fox-hunting when opportunity offered. He laughed at this and asked me whether I had been in the cavalry. I said, "No, merely a sailor," which seemed to explain the reason for my peculiarity. It satisfied him and we parted most amicably.

In travelling from Paris to London on October 11th, I lunched in the train with Mr. Churchill, still Minister of War and Air. He told me something of the Irish Rebellion which had become a very bitter war. The stories of the atrocities by the Sinn Feiners, current at the time, were almost unbelievable; subsequent confirmation of them left a lasting impression in my mind, one that has not been improved by their attitude in the Second World War.

The following day I attended a lunch given in the Guildhall on the occasion of the Air Conference which was discussing civil aviation. R.33 flew over London to remind us that airships were still in the running for air communications of the future.

I returned to Sofia towards the end of the month to close down the mission and this time I took my wife with me. We travelled

via Vienna, Budapest and Bucharest, as I had always wanted to see these cities and here was a good opportunity. Vienna had lost the gaiety for which it had been renowned in the days before 1914. The currency was depreciating rapidly and the old aristocracy were so poor that many were taking advantage of the public soup kitchens to get a meal. We stayed at the Hotel Astoria, where a lunch for five people including wine cost me the equivalent of nine shillings and sixpence.

Schonbrun Castle, the home of the late emperor, impressed me immensely with its beautiful treasures and other works of art. It was now the property of the nation and was open to the public at certain hours. The Cabaret Tabarin, famous for its lovely ladies, was open and well patronized at prices which had anticipated the further fall of the kronen on the morrow. The arrangement of private boxes surrounding the main dance floor struck me as particularly convenient, especially for those who merely came to watch the fun, whilst eating a remarkably good dinner.

Austria of the post-war (1914-18) period was not a workable proposition economically, with one-sixth of its population in Vienna itself and bereft of the main industrial and agricultural provinces as represented by Czecho-Slovakia and Hungary respectively. Something was bound to happen to it eventually, which of course it did when Germany swallowed it at one gulp.

A steamer took us down the Danube to Budapest, passing Pressbourg *en route*, once a thriving Austrian city and now in Czecho-Slovakia; a very beautiful trip the whole way down and an impressive approach to Budapest with its seven fine suspension bridges. We stayed at the Grand Hotel on an island between Buda (the old) and Pest (the new). Admiral Troubridge was most hospitable and helpful during our short stay. His son was acting as flag-lieutenant and many years after I met him again as a captain, when he was naval attaché in Berlin just before the Second World War. The Admiral explained to me the complicated international system regulating the barge traffic on the Danube, which concerned no less than seven sovereign states.

To catch the express to Bucharest it was necessary to go to Szeged, a Hungarian town near the Jugo-Slavia frontier. Passport formalities nearly caused us to miss the train because some upstart official could not understand how I could be British if I had been born in New South Wales, a place he had never heard of. Fortunately, he gave up trying to solve the problem just in time, and we boarded a so-called *voiture de luxe* which had no lighting and no

heating. As we stopped at every station, it was possible to get out and run up and down the platform to get warm, and whilst so engaged at the Czecho-Slovakian frontier station I saw a rough-looking fellow walking off with one of my suitcases out of the van. I caught him by the arm, turned him round and made him put it back again. I heard afterwards that luggage thieving was a popular pastime in that particular corner of Jugo-Slavia through which our train passed.

At Bucharest, capital of Roumania, we stayed at the Athene Palace. The city gave me the impression of artificiality, a bad imitation of Paris. The streets full of gaily uniformed officers and their flashy ladies; a more pleasing feature was the smart carriages with good horses and fur-coated drivers. We left next day in an old open car for the drive to Giurgui over an extremely bad frost-bound road, and crossed the Danube in the ferry to Rustchuk on the Bulgarian side, thence by a reasonably comfortable train to Sofia.

Back at the Union Palace Hotel, we found our friends of the various missions. Winter had set in and woodcock and geese were plentiful quite close to the city. I had several good days' shooting, accompanied by Menard and Poupon; our average bag was some 20 woodcock and about half a dozen geese. By November 14th I had closed up the Mission and we left for England. Perhaps to show their appreciation of the expeditious handling of our task, we had an almost royal send-off from the railway station by the Bulgar officials. They presented my wife with a bouquet and made some appropriate speeches in their own language, which we gathered from the interpreter were complimentary.

On November 22nd, 1920, I was posted to command No. 3 Group at Grantham. Many of the air stations which comprised this group were either closing down or had reduced to a care-and-maintenance basis. At Shotwick, near Chester, Wing-Commander Haskins supervised the ferry service of aircraft to Baldonnel, the R.A.F. air station outside Dublin. At Bircham Newton, Arthur Tedder commanded what remained at that station, Wilfrid Freeman was in charge of Duxford near Cambridge, and Maund of the Experimental Air Station at Martlesham Heath, which was still functioning.

My headquarters were at the air station known as Spitalgate, outside Grantham, and my two senior staff officers were Jack Boyle and Reginald Bone. It was a cold winter but open enough for me to get a very good season with the Belvoir Hounds under

the mastership of Major Tommie Bouch. I moved my three horses up from Sherborne and stabled them at the aerodrome, where a Hunt club had been started by the five or six officers who were keen on the sport.

On December 20th (1920), I attended the first inspection of the cadets at Cranwell by Mr. Winston Churchill, who was accompanied by Air Marshal Sir Hugh Trenchard and Air Vice-Marshal Game, the Personnel Chief. Air Commodore Charles Longcroft commanded the College, which had opened a few months before, and he had a specially selected staff of instructors, many of whom rose to high rank in the service. Quite a lot of them hunted, and there was some healthy rivalry between Cranwell and our Spitalgate Hunt Club members.

On March 24th (1921) the Belvoir Point-to-Point races were held in the vale below Barrowby, at which the first R.A.F. race took place. I rode my horse, Alfred, in the race, for which there were seventeen starters, and some of them were quite out of control, as I found to my cost. Nimrod Capel, the Belvoir huntsman, watching them over the first fence, was heard to remark: "Crikey, they think they're in their blooming aeroplanes." At the far end of the course a loose horse crossed me just before a fence and put my little horse right out of his stride; he hit the fence hard, turned right over and the rest of the field passed over me. I emerged with a broken lower jaw and a cut over the back of the head but somehow managed to walk back to the weighing tent about one mile away. It took about two months for the necessary facial repair work to be completed.

During the summer, instead of using a car to do the three miles from my house at Barrowby to the Group Headquarters, I frequently used a dog-cart drawn by one of my hunters which seemed to enjoy the proceedings as much as I did. If it were not for the parking difficulty, I believe that pony-carts would be used much more frequently in peace-time, as they have been in both world wars.

In July the second R.A.F. pageant took place at Hendon in the presence of Their Majesties the King and Queen. Air Vice-Marshal Sir John Salmond was in charge of the organization and I was acting as one of the reception officers detailed to look after distinguished guests. I found both King George V and Queen Mary were much interested in the proceedings and I was glad that I had studied the programme with some care to enable me to answer their questions. The King, whose main connection had

been with the Navy, in which he had served for many years, took more and more interest in the Royal Air Force. He seldom missed the annual display at Hendon, which became one of the recognized fixtures of the London season.

In August (1921), whilst playing cricket at Grantham, an explosion, evidently a long way away, was noticed by most of us. That evening we heard that the airship R.38 had blown up over the Humber, and that, amongst others, Air Vice-Marshal Edward Maitland had been killed.

The airship was about to be transferred to the Americans and she was on her acceptance flight with some of the latter on board. I was detailed as a member of the Court of Enquiry to investigate the cause of the accident, which we found to have been the result of a failure in her structure whilst under full helm.

Maitland was a great loss, for he was not only a very charming personality but had been with airships from the start and was one of the most experienced officers in that branch of the R.A.F. He was a very keen parachutist and frequently went over the side to give encouragement and confidence to officers and men in the reliability of the new parachute equipment which had been developed. The story goes that he was due to spend a week-end at some country house in the Midlands, at a time which coincided with the test of some new apparatus in one of his airships. He kept both appointments by carrying out his test and then dropping over the side at night near his friend's house. The batman did the same in another parachute and his luggage also was pushed over the side attached to a third one. They all arrived safely on the ground but it took some time to connect with the luggage.

I was not to remain long at No. 3 Group, for it was disbanded in October and I was giving the option of going as Air Attaché at Washington or of attending the Camberley Army Staff College course, starting in January the following year. I chose the latter alternative as I was anxious to obtain some experience of the Army.

My wife and I moved from Barrowby, complete with three children, horses, dogs, etc., to Camberley, where we took Elsenwood, a suitable house within an easy bicycle ride of the Staff College. For the next three months, I studied military subjects and visited various Army Co-operation squadrons concerned with developments in that line.

At Farnborough, No. 4 Squadron (Bristol fighters) was working radio telephony in communication with a tank, giving instructions as to objectives and information as to the ground to be

negotiated. This squadron was commanded by Squad.-Leader Charles Blount, a very brilliant officer who was to reach high rank before he was killed in a flying accident in 1941 whilst taking passage in a transport aircraft. He was a good sportsman, fine shot and had captained the Harrow cricket eleven in one of the matches against Eton at Lord's.

On December 7th (1921) the full text of the agreement with Ireland was published, which reserved the rights to Great Britain of using Berehaven and Queenstown for naval requirements and also the airports adjoining them. I wonder how many ships and merchant seamen we should have saved from a watery grave if those ports had still been available to us in the Second World War.

I started my work at Camberley before the end of the year by taking part in the combined exercise which was conducted on paper and by discussion between syndicates. It was to do with the taking of Hong-Kong by the Japs, and was generally referred to as "Chu Chin Chow." I joined the Jap syndicate, which, with a strong force of Navy, Army and Air, landed at Mirs Bay, to the north-east of Hong-Kong and captured the island within three months; or so we contended, though the defenders thought otherwise.

It was the contacts that were made between the three services which produced the real value of these exercises, and these contacts were not confined to the lecture-rooms. Golf and hockey matches were arranged and both sailors and airmen went with the famous Staff College drag-hunt. Amongst those present from the R.A.F. were: Brooke-Popham, Ludlow Hewitt, Clarke Hall, Gerrard, Edmunds, Bromet, Evill, Gossage, Blount, Courtney, Joubert and Walser.

Whilst waiting for the Staff College course to start in January, I had a good few days with the Garth hounds and also frequent rides with my two elder children, now aged eight and seven respectively. They were lucky enough to share a good pony that did not pull their arms out, which I believe is so frequently the cause of children getting choked off riding for a number of years.

My course started on the 23rd January (1922), three days before our fourth child, Peter, was born. It lasted till Easter, when we had a welcome break of one month. We reviewed the various campaigns of the recent World War, we listened to many lectures on military subjects and we bicycled many miles on tactical exercises. I learnt a lot and met many already distinguished soldiers; the course to which I was attached was the last one of

specially nominated students and some of them had commanded Brigades and even divisions in the last war.

The drag was a great feature of the course, for it was still considered necessary for all field officers to be able to ride. Those that had not got their own hunters were issued with a Government horse, which they rode twice a week with the Staff College Drag Hounds; the master, during my time, was Bunny Torr. My R.A.F. colleague on the course was Wing-Commander Pattinson, who had led a bomber squadron of the Independent Air Force with great success in 1918.

My diary records that, in the outside world, Egypt was granted her independence in February (1922), subject to reservations as to the retention of a British garrison. In India there were riots and Gandhi was arrested. The House of Commons voted eleven millions for the R.A.F.

For the Easter leave, my wife and I went to Menton. We stayed at the Riviera Palace, played a lot of tennis and went expeditions by motor-coach or walked on the hills behind the town. We visited Sospel, the Saut de Loup and Grasse where there is a large scent and soap factory. The process intrigued me immensely, grease and flowers pressed together, after which alcohol is introduced and the scent is separated from the residue which becomes soap, but why it lathers I could not make out. An enjoyable holiday, but I still prefer the south of France in the summer when it is really warm, not cold one day and hot the next.

I nearly missed an interesting tank demonstration at Wool, through turning up at the official train in plain clothes instead of uniform as specified in the routine orders which I had not read. By returning to my house, changing into uniform and driving furiously, I got down to Wool in time to see the show, which gave me a very good idea of the mobility and fire-power of the modern tank.

In July there was much talk of the need for a sound air policy. The Navy pressed for its own component to be returned. Lloyd George announced the intention to increase the number of Home Defence squadrons by twenty. Field-Marshal Robertson wrote that the air must not be subservient to the two older services. Mr. Balfour had already stated his views very plainly on the subject in July of the previous year (1921) in a memorandum on the position of the Air Force in relation to the Army and Navy. The following extracts from his paper are of interest, as it may well be the case that the Air Force owed its survival to this wise old statesman:

It must be clearly understood that the following observations represent only my views, from which experts representing the three services will doubtless differ as much as they differ from each other.

Parenthetically I may observe that the permanent tendencies have not always been towards unification. Up to the seventeenth century, for example, fleets were navigated by sailors, while naval strategy and naval tactics were determined by soldiers. The complete differentiation between the organizations which carried on war by land and war by sea is a relatively late growth.

Leaving history on one side, may we not put our present question as follows: Are there, or are there not, military operations of first-class importance in which the main burden of responsibility is thrown upon the Air Force, while the other services play either an insignificant part or no part at all? The Air Force claim that there are; and it seems to me that their claim must be allowed.

Of these operations, the most striking is home defence against air raids. The Air Force assert that if there is another great war, the first and most formidable danger which this island will run will take the form of a great air attack directed by the enemy against London and other vital spots. From invasion by sea the Fleet may be able to protect us; only the Air Force can protect us from invasion by air. Even anti-aircraft guns, however numerous and well directed, will never prevent invading aeroplanes working their will upon a city like London. Aircraft must, in such cases, be met by aircraft.

Here, then, we have a military operation which not only can be carried out independently by the Air Force, but which cannot be carried out by anything else. The Air Force does not act as an auxiliary; it requires no aid either from the Navy or the Army unless, indeed, the anti-aircraft guns were controlled by the latter, which would be contrary to the principle of a single command. In any case, since the Air Force would do most of the work, it is they who should be responsible for its direction.

I have always thought that if the United States of America had been separated from the Continent of Europe by a narrow stretch of water, perhaps they too would have decided in favour of a third service to meet the need for Air Defence. There was certainly a mix-up in their air defence arrangements at Pearl Harbour in December 1941.

The last term at Camberley was even more interesting than the previous ones, and we worked on plans connected with one or two possible wars of the future. During the study of an invasion exercise at Newhaven, we had the opportunity of seeing some gliders at work on Itford Hill and whilst we were there, Maneyrol, a Frenchman, put up the world's endurance record to 3 hours 20 minutes.

In November I was warned to be ready to leave for Iraq the following February and a few days before Christmas I said goodbye to Camberley, its Commandant, Major-General Sir Edmond Ironside, and the cheery soldiers with whom I had worked for the past twelve months.

CHAPTER IX

IRAQ, 1923 AND 1924

I SAILED in the troopship *Braemar Castle* on the 23rd February (1923) with a large draft of R.A.F. officers and men, mostly destined for Iraq. My wife came on board to see me off and we lunched with the Captain, who asked her where I was going. She replied Iraq. "Oh," he said, "the worst of that place is that so many people die there." However, she was used to that sort of thing. I was O.C. Troops which, though it entailed certain responsibilities, certainly had its advantages as regards accommodation. The voyage was uneventful and I had sufficient leisure to read something about the country in which I was to spend the next two years. That is one advantage of a sea voyage over fast air travel, one can read more serious literature and keep the thrillers for air travel.

I was vaguely aware that the history of Mesopotamia went back to 3000 B.C. and I was interested to read that during this period of ancient civilization, canals had been dug and cities had been built of brick, most of them, including Ur, situated between the lower reaches of the two rivers, the Tigris and the Euphrates. It seemed that whatever vicissitudes the country had suffered during some 3,500 years, its conquerors had not destroyed its commerce and trade. Nebuchadnezzar improved Babylon and even built an artificial rock garden for the benefit of his Median Queen. Alexander the Great brought his Afghan Queen to Babylon in 323 B.C. after his conquests of India, but he died before his schemes for the further development of the country had been started.

Apparently the decline dated from the coming of the Mongol and Turk, when Central Asia continued to throw out new streams of barbarians who destroyed the comparatively civilized life of the country past recovery. I read that Hulagu in A.D. 1258 and Timur in A.D. 1393 each in turn literally exterminated a large part of the population, everything decayed and three-quarters of the land went back to desert and swamp. Subsequently, Arab tribes maintained a nomad or semi-nomad existence, a state of affairs which remained under Turkish rule.

After the final and successful Mesopotamian campaign of 1918

against the Turks, the Anglo-French declaration laid down that the object aimed at by Great Britain and France was the complete emancipation of the peoples, so long oppressed by the Turks, and the establishment of governments and national administrations deriving their authority from the initiative and free choice of the indigenous populations. The declaration went on to say that Great Britain and France were at one in encouraging and assisting such governments and administrations in Syria and Mesopotamia (later to be called Iraq). The mandate for the former was accepted by the French and for the latter by Great Britain.

Feisal, who in partnership with T. E. Lawrence, had done valuable work on the right flank of Allenby's Army in the Palestine campaign, had been crowned King of Syria in March 1920 but was turned out by the French in the autumn of the same year after some resistance.

In 1920 occurred the insurrection in Iraq which took General Haldane some four months to quell with a force of over 60,000, but it was not till 1921 that the country had begun to settle down, and soon afterwards we put Feisal on the throne. The system of air control, advocated by Sir Hugh Trenchard and decided upon at the Cairo Conference of 1921, might well prove to be just the right solution to this problem of keeping the peace without too great a cost to the British taxpayer. A small air force had already been successful in this rôle both in the Sudan and against the Mad Mullah in Somaliland.

We reached Karachi on the 19th March, after a hot trip down the Red Sea and in the Indian Ocean. I learnt the origin of the word *Posh* as applied to some luxury: "*Port Out Starboard Home*," referring, of course, to the cooler side of the ship away from the sun on the voyage to and from India. My cabin was on the starboard side and got all the sun.

At Karachi, I spent a few days at the transit camp and had an opportunity to see the well-organized and equipped R.A.F. depot before we sailed for Basra in the B.I. Persian Gulf boat *Varela*.

Basra, in those days, had not recovered from its wartime rôle of base port. Tins, beer bottles, etc., lay scattered about and there were other breeding grounds for every known bug and fly under the sun. In April the flies are at their worst, later they die from the heat, but the sandfly survives and so does the mosquito, though few of them are of the malarial kind.

A twenty-four hour train journey in reasonable comfort

brought me to Baghdad, complete with luggage intact. I reported to Air Marshal Sir John Salmond at Air Headquarters and took up my residence as one of his staff at the A.O.C.'s house. I found that in addition to No. 84 Squadron at Shaibah we had Nos. 8, 30 and 55 with D.H.9as; No. 6 with Bristol fighters; No. 1 with Snipe fighters and Nos. 45 and 70 with Vickers Vernon twin-engine transport aircraft. The Vernon was a direct descendant of the Vickers Vimy in which Sir John Alcock and Sir Whitton Brown had flown across the Atlantic in 1919. There were also three or four companies of Rolls Armoured Cars manned by R.A.F. personnel.

The Kurds and some Turkish irregulars were giving trouble 100 miles north of Mosul and there were two British columns operating with strong air support towards Rowanduz. These columns were known as Frontiercol and Koicol, each of a Brigade Group strength, the former mostly Assyrian Levies under Colonel Dobbin and the latter composed of two British and one Indian battalion under Brig.-General Berkeley Vincent.

Under the system approved at the Cairo Conference, all the forces in Iraq, both Military, Air, and naval gunboats, came under the orders of the Air Marshal, on whose staff I became Group-Captain Operations. Our advanced headquarters for these Kurdish operations were at a landing-ground outside Erbil, a small old walled town between Mosul and Kirkuk.

The efforts of the two columns were successful in restoring order in north Kurdistan and much of the success was due to the new method of employing aircraft in close support of ground troops over country which somewhat resembled the North-West Frontier of India. Communication between Air Headquarters and the two columns was maintained by air and wireless; the advance of the ground forces was covered by low-attack fighter aircraft using machine-guns. The D.H.9as dropped over 50 tons of bombs on centres of enemy resistance.

The Vernons dropped food supplies as well as boots and clothing for the columns and also evacuated two hundred dysentery cases to the hospital at Baghdad. The first phase in the experiment of air control, in which strong air forces operated with ground columns of moderate strength, had proved successful.

A short period of comparative calm enabled me to get settled into my new job and to take stock of Baghdad and its surroundings. Unlike Haroun-al-Raschid, Caliph of Baghdad in the eighth century, I found little which commended itself to me. Nothing

IRACI
MUSEUM
(101)

seemed to bear closer inspection than that obtained from a distance of 100 yards, at which range one could not smell the object one was looking at, nor see the blemishes which were invariably there. If it were children, it would be face or eye sores with flies feasting on them, if it were donkeys, their backs would be sore. Everything seemed to be covered in dust.

The Maude pontoon bridge across the Tigris had broken as the result of the high river, and there was a large tract of country flooded outside Baghdad. Both Euphrates and Tigris rose to a high level during the flood season; in the case of the former the water was well controlled by a barrage system which fed many canals, but the Tigris was without sufficient canals to relieve the pressure. Both rivers carried much silt and at certain points had built up the level of their bed to a height which necessitated high banks or bunds to confine the stream. If the bund broke, floods resulted over a large area, which the silt made fertile in a subsequent year.

In following the Tigris on a flight to Mosul, one could see where the old irrigation canals had joined the river and could follow, as far as the eye could see, the line they took. These traces of a bygone age intrigued me immensely and relieved the monotony of the long flights to Basra or Mosul. The early morning or late evening with the sun low on the horizon was the best time to see them clearly when the light and shade on small irregularities on the surface of the desert was more pronounced. Some 80 miles to the north of Baghdad one could see the obvious traces of a fine city situated in the bend of the river. One could also pick out the straight avenues which must have had trees on either side, and the canal round the city with offshoots leading into the desert. It was once the capital, but was far too modern to be of interest to the archæologist: it was merely about a thousand years old. Hardly a sign of it could be seen from the ground, only from the air could one trace out and imagine its greatness, for it seemed bigger and better laid out than modern Baghdad.

It did not take me long to regain the technique of flying a D.H.9A, but as there were four and sometimes five squadrons using the same aerodrome outside Baghdad, there was a certain congestion when taking off or coming in to land. This was not improved by the clouds of dust thrown up by the running up of engines or during the take-off. I was constantly finding myself in much too close proximity to some young pilot who jostled me off into the air again during my approach to land. The solution was either to fit a pair of blinkers to my flying cap or paint my machine

in some distinctive way to indicate that there was inside it a Group-Captain who was to be given reasonable landing space. I chose the latter alternative and the result was a blue D.H.9A with the letters "JAN," a compliment to my daughter, painted on the side of the large engine cowling. I flew this machine throughout my time in Iraq without a single engine failure during 300 hours' flying, thanks to my faithful mechanic, Powney.

This big air base, Hinaidi, about 4 miles outside Baghdad at the junction of the Diyala River with the Tigris, was an air fortress designed to survive isolation and investment for many months. In emergency it could accommodate four or five battalions of infantry, at least six squadrons of aircraft besides the large aircraft depot and finely built hospital already there. A bund, protected by barbed wire, surrounded the perimeter, on which armoured cars could patrol. It certainly would have withstood any attack by Arabs and could readily be reinforced by air from either Basra or Palestine. It was thus possible to reduce the normal peacetime army garrison, during the period we held the mandate, to the lowest minimum of regular battalions. By 1924 there were two, one British and one Indian, in addition to Assyrian, Kurd and Arab Levies at Mosul and elsewhere.

In spite of the heat, which during the summer sometimes went up to 120° in the shade, life was quite bearable, if a little monotonous when there were no operations in progress. I bought three ponies, delightful little Arabs, and together we learnt to play polo on the dusty ground near Hinaidi, a game we played on three afternoons a week. Office hours ran from 8 to 12.30 and from 6.30 to 8.30 in the evening, when the day's reports from the out-stations would come in by wireless. Electric overhead fans in all offices and quarters were a welcome luxury though it was surprising how healthy some of the personnel kept, living only in tents at the out-stations. An occasional really bad sandstorm made things uncomfortable and they were obstacles to circumnavigate if met whilst flying.

At the A.O.C.'s residence we lived very comfortably with a good cook and staff of Indian servants, one of whom was my bearer. His name was Antonio, a Goanese and a very lazy one. During the plague season in April when the river is high, the rats are driven up to ground floor level in the houses. As the plague fleas live in the rats' fur, there is a campaign to kill off as many of these rodents as possible. Antonio had his own patent trap, a large sheet of cardboard smeared on one side with some very sticky

concoction and reposing in the middle of it some tasty delicacy suitable for rats. He placed this, sticky side up, in a corner of my room without telling me, and in the middle of the night I was woken by a fine commotion. I switched on the light and there was a large rat sitting down, firmly stuck to the cardboard and obviously wondering what his next move should be. I seized a polo stick and aimed a furious blow at him, missed, and on lifting it to strike again, up came the cardboard and rat complete, stuck to the head of my polo stick. Things got in an awful mess before I eventually finished off that rat, and by then the plague fleas must have abandoned ship; perhaps they too found the take-off too sticky, for they did not test the effectiveness of my plague inoculation. Another rat episode occurred in which the Arab gardener boy was involved. Looking out of my window to see the cause of much barking, I saw a small flaming object streaking across the road pursued by some dogs. It turned out to be a rat which the gardener boy had caught, sprayed with petrol and set alight before releasing. The dogs burnt their noses and the rat gradually succumbed, much to the amusement of the small Arab who was severely dealt with by the gardener. His idea of sport hardly coincided with our own.

Antonio was a Roman Catholic and at the end of the month I found in his book of expenses, which he kept on my behalf, an entry for 12 candles. I asked him what these were for and he replied, "Sahib was missing, I burn candles for sahib's safety." It was true that I had been caught out in a sandstorm and had had to land alongside the Euphrates and wait twenty-four hours till it had subsided. Anyway, Antonio got his money back for his kind thought.

It was seldom that complete freedom from disturbance in one district or another lasted for any length of time. In the days of the Turkish occupation before 1914 minor incidents were overlooked until they became sufficiently serious to be dealt with by the employment of a complete division at a convenient time for campaigning. It was now our policy, by the use of air power, to nip in the bud any trouble which arose and which might get out of hand if not immediately dealt with. By a system of stationing British political advisers or special service officers in different parts of Iraq, Air Headquarters were kept in touch daily with what was going on in the various districts. Where there was no telegraph system available, small parties of R.A.F. wireless operators were located at these out-stations, and they sent off the necessary signals

reporting the situation. Some of these airmen lived for months on end in the wilds of Kurdistan on whatever native food was available and it was remarkable how well they maintained their standard of discipline and trade efficiency.

At Air Headquarters I had a most efficient and cheery operations staff and we classified the Kurdish trouble-makers rather like film stars. When they had been responsible for two or three incidents they became stars and their names were written in capital letters in all reports. For some time the principal star was one, Sheikh Mahmoud, a Kurdish outlaw, but he had apparently repented of his sins and was the recognized Government authority at Sulaimania, a Kurdish town near the Persian frontier. He did not hold it for long and once more became an outlaw after some major offence.

It was the business of the R.A.F. to punish him, and he and his followers became the object of air attention until he slipped over the Persian border into baulk. However, he continued to provide the R.A.F. with most useful training, as he was constantly returning into Iraq territory and raiding peaceful tribes who refused to join his following. He was finally caught and locked up in Baghdad, but with the end of his stardom the R.A.F. lost a valuable training assistant. Others took his place but none was quite so notorious.

On two or three occasions it was necessary to despatch a company or so of Regular Troops to the scene of action and this was done by the two Vernon transport squadrons, the first occasion in which airborne troops were employed. Their arrival within a few hours of the outbreak of trouble, much impressed the Arabs or Kurds and their very presence was frequently sufficient to put a stop to it.

Air operations over the hills of Kurdistan, where there was considerable scrub or rock cover, needed the co-operation of some ground forces to ensure success; over the open desert, further south, the air was completely effective by itself, with the assistance of armoured cars to protect the landing-grounds.

During my time in Iraq, Sir Henry Dobbs was High Commissioner and he lived in the fine Residency on the west bank of the Tigris. Miss Gertrude Bell, who had devoted her life to the country, was a great personality and was probably more in touch with affairs than anyone else out there. Iraq lost a great friend when this courageous lady died a few years later.

I saw King Feisal on many occasions, either at his Palace or

at some function. He was an impressive figure and most dignified whether in his Arab clothes or his Iraq army uniform. He was fond of poker and played a good game of tennis; a friend of the British from the start, he remained so until the end. Other Iraq personalities well known to us at the time were Jafar Pasha, later killed by an assassin's bullet, and Nuri Pasha (in 1943 once again Prime Minister).

True to our usual form we had inflicted our own system of democratic government on the country before it was civilized enough to digest it and the feeling was none too good between the Effendi class, or town dwellers, and the settled Arab cultivator, who knew nothing of politics and cared less. The nomad Arabs, under their own Sheikhs, remained independent, though some of them were very friendly towards the R.A.F., as the following incident will show.

A nomad tribe which wandered, according to the season, anywhere between the Syrian frontier and the Euphrates, somehow made it known to the captain of an aircraft that their chief was very ill and about to die. The Vernon had happened to land near the tribe, and there was a medical officer on board who diagnosed the trouble as appendicitis. After a short palaver, the Sheikh, whose name was Fahad Beg, was put into the Vernon, flown straight to Hinaidi hospital and operated on. He was delivered back by air to his tribe, fit and well, some three or four weeks later.

"Fried Egg", as he was known, occasionally took advantage of his good relations with the R.A.F. by sending his old Ford many miles into Baghdad to say he wasn't feeling well and needed medical attention. An aeroplane would go out with a doctor who usually found that the old Sheikh had overeaten or smoked too much. We found out later that the summoning of the aeroplane was one of his means of impressing his tribe whenever he thought this was necessary.

Another tribe farther to the north, and somewhere west of Mosul, had given some trouble to the French during its wanderings on the Syrian side of the frontier, at this point merely a line drawn across the map with no special feature on the desert to identify it. One of our patrolling aircraft, flown by Squad.-Leader Arthur Coningham of 55 Squadron (in 1943, Air Marshal Sir Arthur Coningham) came down low over the tribe and was fired on. He returned to Mosul, picked up the political adviser, flew back to the tribe, landed near by and called for the Sheikh to give an explanation of his conduct.

It was explained that the machine was thought to be a French one and part of a flight which had recently bombed them. The Sheikh was told not to make such a mistake again and he was so impressed by the action of this R.A.F. pilot in landing amongst them that he wrote a message on the cowlings of the aircraft in Arabic, to the effect that its crew were not to be harmed and every assistance given to them. This inscription was later reproduced on a large scale in polished aluminium and riveted on in a conspicuous place. I learnt this story after having travelled in the same machine, with its pilot, "Mary" Coningham, round one of these long distance frontier patrols north of the Jebel Sinjar. It is in these hills that the Yezidi, or Devil-Worshippers live, their theory being that it is the Devil who must be propitiated, for he is the one who sends evil. They argued that it was safer to offend a good God, who might forgive, than a malignant Devil who certainly would not.

On one of my visits to Mosul, I flew up to Rowanduz, landing on the small aerodrome in the hills north of this mediæval town. To reach the town one had to cross a narrow bridge without parapets over a deep gorge, with a hundred-foot drop below. The test for nerves was to ride one's mule across that bridge without dismounting, a tricky business. To get some idea of this wild country a party of us rode ponies down the narrow gorge which leads towards Mosul. This ride took us seven hours, mostly along tracks cut in the side of the cliff face, just sufficiently wide for one pack-mule; it was just as well we were riding fit. We got some idea of what it would have meant to the column which advanced along that route to Rowanduz if they had not had close air support the whole way to discourage ambushes and snipers.

In June (1923) I was sent on a liaison visit to the French High Commissioner and Commander-in-Chief in Syria, General Weygand. There was still a possibility that the Turks might make some move to recover Mosul, perhaps also Aleppo and Alexandretta in Syria. I flew in "Jan," my D.H.9a to Der ez Zor, accompanied by an escort machine. This town is on the Euphrates on the Syrian border, and the French had a garrison there, in addition to a squadron of old Bréguet aircraft. It took me a four-hour flight to get there and we were almost too well received with a champagne *déjeuner*, followed by some speech making.

It was midsummer and extremely hot, but I was due to reach Damascus before dark, so there was no alternative but to fly on, champagne or no champagne. The Frenchmen were much aston-

ished for they did not fancy flying their Bréguets in the heat of the day. I followed a compass course straight for Damascus across the desert. My escort wireless machine, flown by George Daly, seemed to think I was on the wrong track and to prefer the look of another one heading somewhere into central Arabia. He rejoined me before long, perhaps resigned to the prospect of getting lost in my company as I carried a useful supply of provisions and liquid refreshments. After two hours we passed over Palmyra, ancient home of Queen Zenobia till she was captured and dethroned by Roman Emperor Aurelian in the third century A.D.

We certainly did get a rough passage, and my passenger, Powney, had completely disappeared when I looked round to see how he was faring. The sun was nearly setting when I sighted Damascus ahead out of the yellow haze of the desert. It is called the "Pearl set in emeralds" and it is well named, for the white houses show up against the green trees, and much water flows in various streams and rivers in and around the town. It was a welcome and refreshing sight after seven hours' flying since morning over monotonous desert.

Next day I looked round the famous bazaar. The tin roof was riddled with holes which, they told me, were from bullets fired by certain Imperial troops in their exuberance in first entering the city in 1918. A large part of this bazaar has since been burnt down.

I found General Weygand at his summer headquarters at Aley in the Lebanon mountains above Beirut, a beautiful locality. The General was most cordial, and recalled our previous meeting three years before in Paris. He was very annoyed with the Turk and would not have hesitated to oppose any infringement of territory, though he was not seriously disturbed that this was their intention.

A fine metallised motor road leads from Damascus to Beirut. There is first some very pretty scenery, with rivers on both sides of the road and then a climb up to the pass over the Anti-Lebanon mountains. This pass is 3,500 feet high and near it is the gorge where Feisal's troops held up General Goybet and his French Division on July 24th 1920. The incident is well commemorated by a small monument suitably inscribed to the memory of those fallen in operations, "on behalf of the League of Nations."

Between the Anti-Lebanon and the Lebanon, the road passes over a large plain, with Rayek and Baalbek away to the north-east. At Baalbek the ruins of the ancient pagan temple are quite remarkable; the marble pillars were brought up from Egypt by boat, landed at Tripoli (in Syria) and rolled over the mountains by

slaves. How they managed to get these pillars into position, as well as the enormous blocks of rock, remained a mystery to me. The guide book conveyed little definite information as to the actual origin of Baalbek, but it seems to have figured prominently in the Crusades, when it was hastily converted by the Saracens into a stronghold. But for these alterations and for the earthquake, which further damaged it somewhere about 1880, there seems no reason why it should not have remained intact till the present day. Time and weather appeared to have made no impression on the actual stone or marble pillars.

After leaving Baalbek, we rejoined the Damascus-Beirut road and commenced to climb over the Lebanon, the pass being at a height of 5,000 feet. We saw clean-looking, prosperous villages with the usual white-walled houses and red tiles showing up against the green of the pine trees, and all sorts of other shrubs with here and there a fine cedar. Beirut itself is a typical Mediterranean seaport town, the harbour full of shipping, an air of prosperity everywhere and the usual smell.

I noticed the Nairn Garage, the owner of which had pioneered the 600-mile motor route through to Baghdad via Damascus and Rutbah. At the moment he was away in America buying some big Cadillacs to start a regular service, which came into operation soon afterwards.

We stayed at the Grand Hotel d'Orient and had a most welcome and refreshing bathe in real salt water instead of the slimy Tigris. After returning direct by car to Damascus I flew down to Ramleh in Palestine. There I found No. 14 Bristol Fighter Squadron in excellent accommodation but with a very restricted aerodrome, already outgrown by the more modern aircraft. This air station was not far from Jaffa, where first-class bathing on a sandy stretch of beach provided a very welcome form of recreation for officers and men.

I visited Jerusalem for the first time but unfortunately I could not see the Mosque of Omar as it was closed to non-Moslems after 11 a.m. However, I went over the Church of the Holy Sepulchre, the Garden of the Tomb, and one or two interesting convents, of which there were many of various nationalities. I got puzzled at the conflicting claims put forward as to the actual site of the Crucifixion and burial place of Christ, but the Irish lady who showed me round the Garden of the Tomb left me with the impression that General Gordon's theory was the more likely, that the Garden of the Tomb was the actual site of Golgotha.

Sir Herbert Samuel was High Commissioner and controlled the civil administration of the country. I noticed that his Residency in Jerusalem was a full hour's motor drive from G.H.Q. at Bir Salem—a distinct contrast to the centralization in Syria, where both civil and military administrations were under the same roof. We were obviously interpreting our mandate in a different manner from the French. Disturbances between Jews and Arabs were frequent on all Feast days or holidays.

From Ramleh I flew to Amman, in Transjordan, where Norman MacEwen commanded. He had a flight of D.H.9s and a section of armoured cars which could be reinforced at short notice from Jerusalem. The aerodrome was on a plateau above the town and like Ramleh was already too small for heavily loaded modern machines in certain directions of the wind. I met Philby, the Civil British Representative and Adviser to the Emir Abdullah, the Arab ruler of Transjordan and younger brother of Feisal.

Abdullah was away in camp but MacEwen took me to see him. The setting was perfect; one should always see such picturesque people in their proper surroundings. He was in his Arab clothes sitting on a low divan, there were Persian rugs on the bare sand, a brightly coloured lining to the large tent and his retinue stood behind him. He seemed a very cheery person and in appearance shorter and slightly stouter than his brother.

At the moment we arrived there was great excitement as news had just come through of the Wahabis' attack on Kauf, away to the south-west in Arabia. The Wahabis were a very strict Moslem sect under their leader Ibn Saud; they neither smoked nor drank wine or spirits. They were tough desert fighters and were feared throughout Arabia.

Hussein, father of both Feisal and Abdullah, ruled at Mecca but it was becoming apparent that Ibn Saud had designs on turning him out, as he eventually did a few years later.

The law of the desert, centuries old, seemed still to apply—nomad tribes, toughened by hard living, brought up to raid their softer and more prosperous neighbours, only awaiting a real leader to guide their destinies and to terrorize other tribes into submission. After that, a period of consolidation, a prosperous old age in comparative comfort and luxury, the softening of his followers, perhaps also of his sons, and finally the death of the old chief. Meanwhile, the grouping of fresh nomad tribes in the wilderness, the hardening process, the selection of a leader and the stage was set for repeating the cycle. Now, perhaps, the possession

of a few state armoured cars and aircraft will have altered all that.

During my interview with Abdullah, a Wahabi prisoner was brought in and interrogated in the tent; Peake Pasha gave me a running commentary on what was being said. The prisoner explained that he was glad to be free from the smoking restrictions, in evidence of which he produced a well-worn pipe hidden in the sleeve of his *abba*. This caused general amusement and he was dismissed. Then followed a long tirade by Abdullah against the Wahabis, in which he said that if such raids were permitted to continue, Transjordan could not be regarded as safe and indeed Palestine was directly threatened. In support of this he pointed out that, by the terms of the mandate, we had agreed to defend the country against external aggression.

There was no need for any reply to Abdullah because, at that moment, a messenger arrived to say that the races were about to start, so we all forgot about the raiders, climbed into a fine-looking Fiat car and drove to the races accompanied by Abdullah's two sons. These two boys, aged ten and fourteen respectively, rode their young Arab ponies alongside the Fiat and were a treat to see. Later, Abdullah drove me to Ziza where "Jan" was waiting alongside the Desert Air Route Vernon.

It is quite possible that Ibn Saud did have designs on Transjordan, but Amman as an outpost with its aircraft and armoured cars no doubt played an important part in making him transfer his attentions elsewhere. Now he reigns in Mecca and Hussein is no more.

At Ziza, I slept the night under the wings of my machine, and at the first sign of daylight we started for Baghdad. After taking off I kept station on the Vernon, and we followed the single-plough track which had been cut through to Baghdad, with landing-grounds at frequent intervals, marked with a letter and number. All aircraft flying between Cairo and Baghdad had to use this route and report by wireless as they passed each landing-ground. Aircraft lost in the desert are difficult to locate and there is danger of losing others in the search for them. If bad visibility obscured the track, a pilot was not permitted to continue by compass, but had to seek the nearest marked landing-ground, even if that entailed his turning back on his tracks.

My aircraft was specially fitted; it had an auxiliary tank which gave it an endurance of seven hours; it carried a spare tyre strapped under the fuselage, as punctures on the camel thorn were

frequent; it had emergency rations for three days, two gallons of water, and, incidentally, a special container for beer bottles. As the robot pilot known as "George" had not yet been invented, I fixed up a gadget which worked the rudder by hand and enabled me to take my feet off the rudder bars and stretch my legs when I got stiff. The trip was uneventful and I arrived at Hinaidi after six and a half hours' flying, to find that no fresh alarm had arisen during my absence.

During the lulls between incidents, a full programme of training was carried out. Practice bombing was done under conditions which represented active operations in Iraq, the height chosen for precision bombing being 3,000 feet, reasonably secure from Arab rifle fire. At this height, No. 45 Vernon Squadron, commanded by Squad.-Leader Arthur Harris (in 1942 C.-in-C. Bomber Command) managed to obtain an accuracy which gave an average error from the target of only 25 yards. Dive bombing by the Snipes of No. 1 Fighter Squadron averaged a 40-yard error after releasing their bombs at 1,000 feet. Both Nos. 45 and 70 Squadrons practised night bombing at an illuminated target. Food dropping in containers attached to parachutes was brought to a high state of efficiency and the method was frequently used for supplying isolated detachments in the hills of Kurdistan, where landing-grounds were scarce. The Snipe Squadron also became expert at picking up messages attached to a line between two posts. They were fitted with a bamboo pole with a hook on the end which let down from the aircraft and caught the line as the machine passed over, the message was then hauled up.

A demonstration of bombing was given occasionally for the benefit of any party of sheikhs who happened to be visiting Baghdad from time to time. It was a polite method of demonstrating what might be coming to them if they decided to misbehave at any future time.

Cholera cases were reported in August and of all epidemics this appears to be the most upsetting to the normal life of a community. The town was placed out of bounds, no fresh milk, eggs, vegetables, fish or meat were to be consumed and all personnel had to be inoculated. The air crews of the Air Mail were placed in quarantine on arrival in Cairo and various other restrictions resulted. We were glad when this period ended.

Press cuttings from home gave news of fresh controversies between Admiralty and Air Ministry (August 1923). The two Ministries were having one of their periodical arguments about

the Fleet Air Arm and the Admiralty wanted their portion of the R.A.F. returned to them. The Balfour Committee consisting of Lord Balfour, Lord Weir and Lord Peel, recommended that there should be no split in the R.A.F., but that the Admiralty should be granted certain concessions in the matter of approving appointments and in other minor respects.

Towards the end of the summer there were signs of trouble with the tribes south of Nasiriyeh. It was brought to a head when a local sheikh in that district decided, on his own, to levy taxes from travellers between the two holy cities of Najef and Kerbala. He got thoroughly frightened on the arrival of an armoured car section accompanied by a squadron of aircraft in the air, ready to take instant action. He came in quietly, handed over his money and apologized. A bloodless victory through very prompt action, and a valuable lesson.

During one of my flying visits to Kirkuk I motored out to see the most extraordinary phenomena in the shape of a ring of flame coming out of the rocky ground: small holes like gas jets in the soil, each with an intermittent flame coming from it. One could stamp them out, but after a few seconds they would light up again. They must have formed from some combination of gases far below the surface and this district was subsequently developed for oil with most successful results. Perhaps this was the spot where Shadrak, Meshak and Abednego went through their ordeal of the burning fiery furnace.

Amongst the many inconveniences of Iraq, such as sandflies, heat, dust, inoculations and restrictions resulting from indifferent water, the plague season or cholera epidemic, perhaps the most annoying was the Baghdad boil. It comes from the bite of a fly and may choose any exposed portion of one's anatomy. I got one on the point of my elbow and it remained an annoyance for as long as eight months before it finally faded away, though the mark still remains. An unfortunate English woman had one on the tip of her nose, an appalling disfigurement, and a lasting blemish difficult to conceal.

Harold Primrose commanded the armoured cars during my time in Iraq, and on one occasion I went a long trip with him in a Rolls Royce in order to gain some idea of their suitability for operations on other than pure flat desert. We reached Sulaimania in Kurdistan after some 300 miles' rough going which included the passage of two passes, Bazian and Tasluja, the latter at an altitude of 3,000 feet.

It was evident that, skilfully driven, these armoured vehicles could be operated freely over roughish country in the dry season, but Iraq sand, after rain, is a very different proposition. It seems to produce the most slippery mixture, which is even difficult to negotiate on foot. Luckily, it dries out very quickly when the rain ceases and the sun comes out.

In November the Iraq Government decided to bring under effective administrative control the large Beni Huchaim confederation of tribes, estimated to have a male strength of 30,000, a rifle strength of 12,500, including many modern rifles, and inhabiting normally the area between Samawah and Rumeitha. This area, even in Turkish times a constant source of trouble, was probably one of the areas least amenable to control, the tribesmen, being well armed, good fighters and inhabiting a most inaccessible area intersected with irrigation channels, passable only to pack transport with difficulty. It had been a centre of disturbance in 1920, and had enjoyed a state of virtual independence since that time. Government orders had been continuously ignored, and Levies, Police and Government officials had been frequently fired upon.

After the rising in 1920, a fully equipped Infantry Division of Iraq troops was unable to deal effectively with this area. The proximity of the Baghdad-Basra railway complicated the problem. Previous attempts had resulted in the rupture of this railway, and it was important for reasons of confidence and prestige that this should not re-occur. It was generally agreed that administrative measures alone would not suffice and that active measures had become necessary. Very little was known of the area, as no Government officials had visited it for some considerable time. It was essential that the objectives to be attacked should be identified, and the location of the villages fixed.

The maps were inaccurate and out of date, and in a district such as this, where the location of villages is constantly fluctuating, the task was not easy. Two Intelligence Officers were sent to the area, and after careful preparation on the ground, and subsequent correction from the air, were able to produce a Target Map showing the location of all villages, as well as indicating the names of the sheikhs and tribes to which they belonged.

Operations, if undertaken, would have to be in strength. Many previous encounters with the Government had failed to bring the tribes to terms; on this account they enjoyed considerable prestige with their neighbours and any initial failure would have attracted all these tribes to their assistance, and would endanger the safety

of the railway line. Ground troops for this purpose were, in every way, out of the question. In the first place, owing to reductions already effected, sufficient troops were not available, and further, they were entirely unsuited for the terrain and type of warfare.

Air operations in strength were decided upon, supported by a small ground force of armoured cars acting passively for the defence of two important bridges, and as aerodrome guards. To obviate offensive action if possible, and as a means of testing the present attitude of the tribes, the sheikhs and headmen were first of all summoned to Samawah to give security for the good behaviour of their tribes.

After considerable delay, and a final conference on November 28th, the result left us in no doubt as to the attitude of the sheikhs. Of some forty-two who were summoned, only four came in, and of these only one was able to produce satisfactory guarantees.

Meanwhile, in anticipation of this result, it was my duty, as Group-Captain Air Staff, to prepare the general plan of operations. Having done so, I was rewarded by being placed in command of the Forces to be employed. These included a Snipe squadron operating as dive bombers and for low machine-gun attack, three D.H.9A Bomber squadrons, a Vernon flight for heavy night bombing, three sections of armoured cars, one battalion Iraq Infantry and two platoons Iraq Levies.

The aerodromes used were merely emergency landing-grounds without any ground organization or facilities; they were, however, in close proximity to the railway.

The aircraft engaged were too numerous to be able to operate from one aerodrome, and in order to employ them to their maximum capacity, it was necessary to base them within easier reach of the target than they would have been if operating from Hinaidi and Basra. Three trains were therefore prepared, two at Baghdad and one at Basra, which contained the necessary ground organization for these bases, including supplies of bombs, petrol, oil and a W/T station. They arrived at their destinations early on the morning of November 29th, and had completed all arrangements for the commencement of operations on November 30th.

Air action commenced at dawn and was carried out continuously until midday on December 1st, against the Barkat and Sufran tribes, selected as being farthest from the railway, and in anticipation that the other tribes would submit as a result without the need of further action.

During this period, 25 tons of bombs of all types were dropped,

and by use of the meticulously prepared target map, none but hostile targets were attacked, although certain of these were in close proximity to targets which were immune. A raid was carried out by night with great moral and destructive effect, the village attacked being located and set alight with incendiary bombs.

The effect of these operations was instantaneous. By the afternoon of the 1st December the majority of the sheikhs had surrendered, whilst many of the neighbouring sheikhs, as yet untouched by offensive action, had hurried to Administrative Headquarters to submit.

The next morning, a force of Iraq Police was able to commence a tour throughout the district with close co-operation by Snipes and accompanied by a Royal Air Force liaison officer. Message picking-up and dropping was successfully carried out and the Police derived the greatest confidence from this co-operation.

With the exception of the Snipes, all aircraft returned home on December 3rd. The Police Force returned to Samawah on December 4th, having completed the destruction of all fortified buildings; they had encountered considerable physical difficulties but no opposition. The railway continued running practically to normal schedule during day-time, and returned to complete normality after a week.

By the 10th December the effect of the operation had been so great that it was possible to summon all the sheikhs of the Beni Huchaim (some 70) to Samawah, where, at a Durbar, they agreed to all the conditions imposed upon them. These included the destruction of all fortified buildings, which had been to a great extent responsible for the continued inter-tribal fighting and consequent defiance of the Government. Many of these sheikhs were unknown to the Government officials, having given no obedience to the Government since 1920.

This result, attained by the use of air action alone, was the most striking testimony to the power of Air Control as yet achieved in Iraq. After operations for the short period of thirty-six hours, practically all the leaders, who had for three years absented themselves from the Government, surrendered and agreed to the severe terms imposed upon them.

During these operations, a D.H.9A was hit in the radiator by a stray Arab bullet, and was forced to land near one of the targets. It was quickly surrounded, at a safe distance, by hostile Arabs but these were kept at bay by the Observer, Taffy Jones, using his Lewis gun to good effect. The pilot, Vincent, a big strong chap,

stationed himself at the tail and lifted it round whenever the Arabs showed signs of attacking them from the blind spot directly in front. A flight of Snipe fighters, led by Luxmoor, appeared on the scene; the leader landed alongside but was asked by Vincent to cover them from the air till another D.H.9A arrived and took them off after burning their machine. It was a fine demonstration of courage and initiative by all concerned.

I remember riding into Samawah, attended by my staff and with an escort of Iraq Cavalry, to accept the surrender of the sheikhs. Lieut.-Colonel Ronnie McClean of the Iraq Army and Wing-Commander Freddie Guard of the armoured cars were two of my chief supporters on that occasion. We had used overwhelming force at the right place and at the right time, a combination desirable in dealing with any trouble, but particularly with the Arabs of Iraq.

The time seemed opportune for some leave, which was granted by the Air Marshal, and I left in my aeroplane for Cairo. The weather had broken and I had difficulty in getting across the desert to Amman. My escort was with me and we had to land two or three times along the track because of low visibility closely resembling a Scotch mist. I recollect that we spent a particularly cold wet night under the wings of our machines at landing-ground No. 5, half-way across.

I reached Cairo on December 15th and was immediately put into quarantine for cholera by the Egyptian authorities. I did not fancy spending my leave in an isolated tent surrounded by barbed wire, and after some difficulty managed to obtain my release and catch the P. & O. *Maloja* next day for Marseilles. I reached my home in Grantham in time for Christmas and enjoyed five weeks of hunting, ball dancing and children's parties. The latter were a great feature of the neighbourhood and it was my business, or more accurately I made it my business, to act as chauffeur on occasions when suppers were provided for the parents. The children thought that was a good idea and the better the supper the longer the time they were allowed to stay, for Papa, too, was enjoying himself.

On February 1st (1924) I started back for Cairo, accompanied by my wife. We went by way of Paris to Rome, where we stayed for a few days and had time to see the sights. It is always satisfactory, when one knows something of a place, to be able to show round a companion who has not seen it before.

It seemed to me that Italy was beginning to tidy itself up;

there were not so many beggars about, the trains ran more punctually, luggage arrived intact and there was a general air of alertness in the people I saw about. In its initial stage, Mussolini's regime was certainly having a good effect, to all outward appearances. Even Naples had begun to wake up, and the Italian liner *Esperia*, which took us to Alexandria, gave us a most comfortable passage with excellent food and accommodation.

In Cairo we stayed at the Heliopolis Palace Hotel which had re-opened after serving as Headquarters of the R.F.C. Middle East during the war. We met many friends and were well looked after by the A.O.C., Sir Oliver Swann, and his wife.

The story is told of a high Egyptian official who asked an Englishman how long he was staying in Cairo. On hearing that it was only to be a fortnight, he said: "Then you will see everything, for it is those who stay for two years who postpone their expeditions till it is too late, and in consequence they see little." If I were asked what is the best place to visit during a one-day stay in Cairo, I would choose the Museum, for there one can see the relics of ancient Egypt, and thus trace its history from the earliest days. Moreover, one can do it under the most comfortable conditions.

Our fortnight together passed all too quickly and, at the end of February, I said good-bye to my wife and flew off in "Jan" to Amman. Instead of finding myself at a dull air station on the edge of the desert as anticipated, I had a pleasant surprise. Norman MacEwen, the C.O., had arranged a dance, and many of the young and beautiful had been imported from Jerusalem, across the River Jordan, for the occasion. It was a gay evening, and we danced till the small hours. Next morning I left for Baghdad with my faithful escort of Geoffrey Cock and Vincent, both in their D.H.9as. It was an uneventful trip of six hours and my passenger for the occasion was Squad.-Leader Richard Peck (in 1943 Air Marshal Sir Richard Peck).

No serious incidents had occurred during my absence, but I found that Sheikh Mahmoud, still our principal star, had nearly been killed by a bomb dropped on his headquarters. His escape still left us with our training assistant, but his place was soon to be taken by a new competitor from Central Arabia.

Among the tribes which came under the influence of Ibn Saud were the Akhwan. In a short time they built up an unsavoury reputation by their ruthless raids on neighbouring peaceful tribes. These hard, tough desert fighters could travel up to 100 miles on their camels, usually during the hours of darkness. They would

lead their horses and only use them for the actual attack which frequently resulted in the wholesale massacre of the male tribesmen and the capture of their entire stock of camels and sheep. With their local leader, Feisal Darwish, they roamed that portion of the desert which lies to the south-west of Basra and to the west of Koweit. This was far too close to the semi-nomad or Riverene tribes near the Euphrates in Iraq.

The Iraq Government were anxious that these marauders under Feisal Darwish should be severely dealt with on the next occasion they came across the frontier. The difficulty was to obtain reliable information of their whereabouts, and that was not too easy to obtain from local peaceful tribes; their inclination was always to exaggerate their own danger in order to ensure the continued presence of the protecting aircraft.

In March I established a temporary headquarters in a railway siding at Jaliba, not far from the ancient city of Ur. I had two squadrons of D.H.9as and a company of armoured cars. Long-distance reconnaissances down to the frontier failed to locate any Akhwan in the neighbourhood, yet our assurance to the local tribe that they had nothing to fear was quite unconvincing. That very evening we saw camels, donkeys and sheep being driven as fast as they could go, right across our landing-ground, with frightened Arabs of all ages shouting "Akhwan, Akhwan," as if the devil himself were after them. It was merely a scare, and some fifth columnist must have started the stampede, but it showed the reputation which this ruthless band of Bedouins had made for themselves.

The panic subsided when it was realized that there were, on this occasion, no Akhwan anywhere near, but the situation became acute a year or so later, after I had left. By then Ibn Saud had become ruler of Saudi Arabia, but Feisal Darwish defied his authority and continued his depredations which he extended across the frontier into Iraq; he was severely dealt with by the R.A.F.

In April 1924 Sir John Salmond left for home. He had established the effectiveness of Air Control and had fully justified the expectations of the Cairo Conference. Air Marshal Higgins relieved him as A.O.C.-in-C. and he had not long to wait for an incident to claim his immediate attention. This time it took the form of a fracas in the bazaar at Kirkuk in which some Assyrian Levies killed a few Kurds. As these Assyrians were mostly Christians, the incident might have grown out of hand if not

immediately dealt with. A company of Inniskilling Fusiliers was flown up to Kirkuk in Transport Vernons, and the presence of British troops stabilized the situation.

The story of the Assyrians is a pathetic one, for they had come to Iraq as refugees with their families and what possessions remained to them after many vicissitudes. Their original home country was in the hills south of Lake Van and in the general direction north-east of Mosul. Their Patriarch, Mar Shimun, had been treacherously murdered by Kurds in 1918, and when the Russians collapsed the Turks almost finished off what remained of this Christian community, but somehow the survivors found their way through Persia into Iraq. At the time of the Armistice they were in the refugee camp at Baquba not many miles north of Baghdad on the Diyala River. In four years they had lost no less than two-thirds of their original population; they could not return to their home because the Turks would not have them, and the Iraq Government wanted to get rid of them at the earliest possible moment.

The three or four Assyrian Levy battalions under Colonel Dobbin were good fighting units, the men were well trained and amenable to discipline under British officers, but they occasionally saw red when some incident occurred involving Kurds, their hereditary enemies. Some years later their numbers were again reduced in a large-scale conflict with the Iraqis, and the majority of those that remain have found employment with the R.A.F. in Iraq.

The next problem with which we were faced was the violation of the Mosul Vilayet frontier by Turkish irregulars, a convenient term for Turkish troops acting on instructions from their local commander who could disown them if their activities led to diplomatic representations on a high plane. In this case swift retribution followed this barefaced infringement of territory, for they were immediately attacked by No. 6 Squadron, R.A.F., and quickly withdrew whence they came.

There is little else to record of the rest of my time in Iraq, and on October 12th I flew off *en route* to England and to some new appointment, yet to be disclosed. I went by way of Damascus with my usual escort, and this time I followed the Nairn trans-desert car route, the tracks of which were even plainer than the air-route plough track to Amman. This motor service was now running to a regular weekly schedule. Leaving Baghdad or Damascus about 1 p.m. the cars arrived at their destination by 11 a.m. next day.

A strenuous trip, driving all through the night, but Nairn had turned an adventurous exploration into a normal transport service inside two years. It was a good example of private initiative and enterprise.

Once again I visited General Weygand in his summer headquarters at Aley, in Syria, and after dining with him and his family I played the fashionable game of Mah Jong, which taxed my French to the utmost.

I said good-bye to my faithful D.H.9A at Ramleh, and, as if to show her sorrow at my departure, her engine refused to start for the sergeant pilot who was to take her back to Iraq and a long refit at the depot.

Back by way of Cairo and the P. & O. *China* to London, after an extremely interesting and profitable two years with the R.A.F. in its desert training-ground.

CHAPTER X

ANDOVER, AIR MINISTRY AND INLAND AREA (1925-9)

MY first appointment after coming home was to No. 7 Group, Andover, as A.O.C. till March, and then to Air Ministry as Director of Equipment. After some leave at Grantham, I took over my new group on December 1st (1924). A very nice service house went with this appointment, Woodside, at Amport, which was most convenient. It was completely furnished and there was no need to bring anything from my home for the four months I was to be there. A service house has many advantages.

My headquarters at Andover Air Station were close to the R.A.F. Staff College which had opened in 1922 under the first Commandant, Air Vice-Marshal Brooke-Popham. It was here that air strategy and tactics were studied, and the efficiency of the R.A.F. in later years owes much to this establishment, where the employment of the new arm was under constant review, unhampered by any outworn traditions, and staff and students learned to think ahead as each new technical development opened up visions of greater scope for air power.

Among the units comprising the group were two bomber squadrons, No. 12 with Fairey Fawns and No. 58 with Vickers Virginias. Both these squadrons were to reach a high state of efficiency in their respective spheres, the former as a light type day-bomber squadron, trained to operate in close formation, and the latter as a heavy night-bomber squadron. The Fairey Fawn, with its Napier Lion engine of 400 h.p., was a two-seater with a bomb load of 500 pounds, and the Virginia with two Napier Lion engines, carried a crew of four and some 1,500 pounds of bombs.

Mr. Richard Fairey (later Sir Richard), the head of the firm which bore his name, had been responsible for the design of the Fairey Campania, a two-seater seaplane used in aircraft carriers in 1917 and 1918. This was followed by the Fairey IIId which later developed into the IIIf, a three-seater. With a 450 Napier Lion engine, it was used as a general-purpose aircraft, either on a float or wheeled undercarriage. It remained in service as a useful general-purpose machine for a number of years in carriers at sea, and on land at home and overseas.

All these types, however, were designed to particular specifications, issued by the Admiralty in the case of the Campania, and by the Air Ministry after 1917. As a result the designer was handicapped by the necessity of complying rigidly with the specified requirements which frequently included the folding of wings, fitting of certain bulky wireless equipment, gun mountings, flotation gear, etc. etc. Under such conditions it was difficult to produce a really clean design, so necessary for high performance.

It was, therefore, Fairey's practice, as well as that of some of the other well-known aircraft firms, to produce "private-venture" machines. Choosing the Air Ministry specification of one type or another, their designers would embody as many of the specified requirements as possible which did not clash with the over-riding consideration of a clean design and high performance.

Richard Fairey was particularly enterprising in this respect, and in March of 1925 I saw the Fairey Fox biplane with a 450 h.p. American Curtiss D.12 liquid-cooled engine. This private-venture machine marked a definite advance in the development of the light day bomber. It had very clean lines, and in consequence its speed had gone up to well over 150 m.p.h. which was faster than contemporary fighters. No. 12 was the first squadron to be equipped with this type, and they made the most of the privilege by evolving a new technique for high-altitude bombing in formation.

Later, the American Curtiss was replaced by a Rolls Royce engine, but not before it had demonstrated the advantages of reduced head resistance by compact engine design.

The same firm then produced a new fighter, the Fury, which, with a Rolls Royce Kestrel engine, put the speed of the single-seater twin-gun fighter ahead of the Fox and of the Hart, a somewhat similar design produced by Hawkers. Both the Fury and the Hart with Rolls Kestrel engines survived for many years in the fighter and day-bomber squadrons respectively of the R.A.F. Two variations of the Hart were the Audax, in use by Army co-operation squadrons, and the Osprey, a folding version, for the Fleet Air Arm.

The Vickers Virginia was the bomber counterpart of the Victoria; it proved a useful night-bomber type and lasted for some years in R.A.F. squadrons. The Handley Page twin-engined Hyderabad was designed for the same purpose, and remained a contemporary of the Virginia.

In describing these developments I have anticipated events somewhat, for few of these types I have mentioned had, as yet, been supplied to squadrons when I took over from Air Commodore Pitcher as Director of Equipment on the 1st April 1925.

The Directorate of Equipment, together with that of Technical Development, formed part of the Air Ministry department under Air Marshal Sir Geoffrey Salmond, the Air Member for Supply and Research (A.M.S.R.).

It was the duty of my directorate to plan the amount of equipment of all sorts required by the R.A.F. in the following financial year, and with the assistance of the finance branch to produce the figures ready for the Air Estimates to be presented to Parliament. We would embark on this task in October, having been given a rough total figure which was not to be exceeded. Then would follow the paring process as our total target figure was reduced month by month, in response to the pressing political cry for economy. The Air Estimates, in their modest form, would then be passed by Parliament and the contracts for the year's equipment requirements would be placed by the Directorate of Contracts. Meanwhile, the work of supply from depots to units at home and overseas would continue.

One of the main difficulties was, of course, to obtain decisions months ahead as to the types of aircraft and engines which were to be ordered during the following financial year, for on that depended the figures for the budget. The Technical Department were naturally averse to committing themselves so far in advance; they were anxious that squadrons should have the advantage of the latest types, not only of aircraft and their engines, but of all accessories, new gun mountings, bomb gear, wireless equipment, etc. etc. Moreover, they always argued that another month or so would make all the difference in enabling them to recommend that the new design was sufficiently stable to justify production orders. We, in the Equipment Directorate, were, therefore, faced with either having to take a chance that the new design would be acceptable, or play for safety and repeat the orders for the existing types and budget accordingly. Such is the handicap which the Parliamentary system of the annual budget imposed on a very rapidly developing technical service such as the R.A.F.

It was all intensely interesting, and I had a fine team working in the various branches, all of them experts in their particular line. A list of the varied assortment of equipment with which we had to deal, not only in receiving from contractors and issuing to units,

but in storing, maintenance and subsequent repair, would include anything from a toothbrush to a £25,000 aircraft.

There were main depots for the various groups of equipment; the biggest of them, at Kidbrooke, handled M.T., wireless, clothing and a considerable amount of repair work of these items. Elsewhere, depots dealt with airframes, engines, etc., and at Henlow, an aircraft depot did such repair work of airframes and engines as was not relegated to firms to keep them going. That was one of the great problems, the business of trying to keep sufficient aircraft firms alive so as to ensure a rapid expansion of production in times of emergency.

Nothing of particular interest occurred in the summer of 1925. In May I watched the new Territorial A.A. Brigade working searchlights in Hyde Park, trained on Vickers Vimys, flying high; also in May, at Wembley "London Defended," a Fire Brigade display with illuminated aeroplanes flying overhead in formation. In July there was the King's Cup Race, in which the new Armstrong Siddeley Siskin took part. In its service form, it was to be one of the standard-pattern fighters of the R.A.F. for two or three years. It had a Siddeley 14-cylinder 380 h.p. Jaguar engine, air cooled, and the airframe and wing structure were entirely made of metal.

During the year (1925) the new organization for the Air Defence of Great Britain came into being under Air Marshal Sir John Salmond, with headquarters at Uxbridge, controlling both Fighter and Bomber Groups. For this new command fifty-two squadrons had been sanctioned in 1923 as the target to be aimed at, but during my four years as D. of E. political considerations seemed to prevent any attempt being made to build up to that figure.

In January (1926) I saw the first big Victoria troop-carrying aircraft, the type which subsequently replaced the Vernons in the Iraq squadrons. They could carry twenty fully armed men for about 200 miles, and they remained in service in Middle East, India and Iraq for many years.

In March I met Sir Alan Cobham on his return from the Cape-to-Cairo flight in a de Havilland 50, fitted with a Jaguar engine. Cobham blazed the trail for future commercial air services and showed what could be done by individual initiative and enterprise. It was with Alan Cobham as pilot that Sir Sefton Brancker, for many years Chief of Civil Aviation, flew to India.

During April it became evident that a general strike of all

Transport workers was probable. My task as D. of E. was to arrange for maintaining supply of food and equipment to R.A.F. units by motor transport. The strike started on May 3rd but, thanks to voluntary efforts, transport services on a limited scale were kept going somehow. There were some ugly incidents in various parts of the country, but it became apparent that the great majority of the people strongly resented this attempt by a minority to paralyse the life of the community. The Britisher does not like his ordinary daily life interfered with by striker or Hun. Amateur train and bus drivers daily became more expert, distribution of milk and food supplies went on, and it was obvious that the T.U.C. had underestimated the solidarity of the British public. The Press stopped issue, but the *British Gazette* was printed at the offices of the *Morning Post*, and, in addition, the news and instructions to the public were announced on the radio.

On May 12th the T.U.C. cancelled the strike at midday, and by May 15th things had sufficiently calmed down to relax emergency measures. Miners still remained out for some time, resulting in prospects of a coal shortage during the winter. Otherwise life became normal once more in a very short time.

On my next week-end leave to Grantham my wife described how a canteen had been organized for the voluntary transport drivers passing through the town, and went on to say how much she was impressed by a cyclist who had called in for some refreshment on his ride from London to Goole, in Yorkshire. I mildly remarked that this did not seem to me a particularly difficult or arduous ride for, after all, Dick Turpin had ridden Black Bess from London to York. A family argument followed, in which they all said that I had never been seen on a bicycle, so how could I know anything about it. A wager resulted, in which I found myself committed to riding a push bicycle from my flat in Clarges Street to Grantham, between midnight and midnight, before the end of October.

It was necessary for me to requalify as a cyclist, and to regain some of my early enthusiasm for the sport. With Wyndham Farrington, a squadron-leader who agreed to accompany me, I practised in Hyde Park before breakfast in the morning. I found that in this early morning exercise I was in good company. There were many brother lunatics taking exercise in one form or another. There was the fat gentleman who wore many sweaters, and half ran and half walked till purple in the face and dripping from every pore, he would disappear for breakfast. Then there was the

sporting old man who regularly collected a pack of dogs on his walk from somewhere near Cadogan Square to the park, hunted a cat or two in Kensington Gardens, and on his return would leave each canine friend on the doorstep to which it belonged. However, our particular friend was an old lady on a tricycle. Whilst she did one circuit of Hyde Park within a certain time, we set ourselves the task of doing two, and it took some careful timing.

Having obtained a weather forecast from the Met department of the Air Ministry, which indicated favourable light winds, Wyndham Farrington and I set off from Clarges Street one fine October morning and made Hatfield for breakfast. We cycled merrily along, side by side, for it was only to start with that we formed single line ahead when cars were overtaking us. We soon gave that up and did as cyclists do, occupying as much space on the road as an ordinary car.

We reached Eaton Socon for lunch, and as this was half-way to Grantham and some 55 miles from our start, we decided to lunch at the White Horse. Unfortunately there was roast pork on the menu and we could not resist that, as well as some beer to go with it. After a short interval we went on once more, but neither the roast pork nor the beer would settle down, so we suffered in silence and pedalled along, reaching Norman Cross for tea. We then recovered our cheerfulness and made Stamford by seven o'clock. Instead of having some hot soup or chocolate, I telephoned my house, only 22 miles away, to keep some supper for us, had a whisky and soda and some biscuits and went on again.

I had so often done that trip between Stamford and Grantham in a car that I did not realize there were at least thirty small inclines which took some negotiating on a bicycle in the dark after 90-odd miles. Moreover, the new road had not yet been made up and the old one was full of pot-holes. We had a miserable ride for 10 miles, both becoming more and more exhausted, till we literally fell off our bicycles outside the old Ram Jam Inn, into which we crawled. We fed on hot chocolate and eggs, and as we were doing so my wife must have passed in the car on her search for us. She eventually found us, and we followed her into Grantham, going very strong. I occasionally wear a fox tiepin as a memento of that 110-mile bicycle ride.

Early in January 1927 trouble in China necessitated the despatch of an air contingent in support of an Expeditionary Force to

Shanghai. Fairey IIIs and Fairey Flycatchers, a Fleet Air Arm fighter type, were loaded on board aircraft carriers and sent off at short notice, complete with spares and equipment. Arrangements for this came, mostly, under my directorate. It was reckoned that the Government had acted wisely in sending troops and aircraft to Shanghai, otherwise the concession would have almost certainly been raided by Chinese hooligans.

In May (1927) Captain Charles Lindbergh flew the Atlantic and landed near Paris; soon afterwards he flew on to London. Late one evening, as I was finishing my work at the office, I was requested to go along to the American Embassy at once, see Lindbergh and arrange for his machine, the "Spirit of St. Louis," to be loaded on board a liner the following morning, for passage to New York. I went, feeling none too pleased at the prospect, and was eventually shown up to Lindbergh's suite, where he was changing into evening dress to attend some function. He at once apologized for any trouble he might be causing, and volunteered to fly his machine down the following morning, to wherever I said, and at whatever hour I wanted. I fixed the time for our start from Croydon at 5 a.m., to which he readily agreed, as he had to be back by breakfast in time to go to Buckingham Palace at 10 a.m. To my relief, and, I may add, somewhat to my surprise, he was there on time. I accompanied him down to Gosport in a Bristol fighter, and we landed soon after six to find that most of the officers had turned out to greet him. He talked to them for some time and then flew back to Croydon in one of our new fighters, a Woodcock. As my Bristol was considerably slower, he kept contact with me by occasionally doing aerobatics in my vicinity, including a succession of loops, with my Bristol as the centre of the circle. We arrived back in good time for his breakfast at the Embassy, and he kept his appointment with His Majesty.

He seemed to me not only a very fine pilot, but one who had not got a swollen head from his recent success and notoriety. I saw him a few years later, after he had visited Russia, and he was full of praise for all he had seen there. It was after his visit to Germany, shortly before the World War, that his admiration for the Nazi regime affected his outlook towards this country. In *Listen the Wind* written by his wife, who frequently accompanied him on his long flights, there is a wonderful description of the trials and anxieties of a pilot waiting to get away on a long-distance flight in an overloaded seaplane.

In September the Schneider Trophy Race for seaplanes was

held at Venice. It had been decided that service backing was to be given to enable a British team to enter under favourable auspices. For this purpose a high-speed flight had been formed at Felixstowe, and a team of three selected to compete.

My wife and I went out to see the race, and arrived in Venice a day or two before it was due to take place. The result turned out to be a triumph for British design. It took place on the 26th, and we watched it, in company with Philip Sassoon, from the breakwater on which one of the turning-point pylons had been erected. It was won by Webster in a Supermarine S.5, Worsley being second in a similar machine. Kinkead, in the Gloster, had to retire, as his spinner came adrift.

It was a thrilling sight to see these small fast seaplanes rounding the pylon near which we stood. The British team did their turn in a wide circle, keeping their speed, but the Italians cut it much finer and did a tight turn from which they had to regain their speed after straightening out.

On our way back from Venice we stayed at the Regina Palace Hotel, Stresa, on Lake Maggiore, where we met my old Italian friend, Baisini. There were various celebrities staying at this delightful resort. I saw Bernard Shaw bathing in the lake, a most impressive sight; it must have been very cold for him. King Feisal and his entourage were staying in the same hotel, no doubt having a welcome change from the summer heat of Baghdad. I was pleased to hear from him how well things were going in Iraq.

At the end of September (1928) I accompanied the Under-Secretary of State for Air, Sir Philip Sassoon, on an air tour of inspection to the R.A.F. units in Egypt, Sudan, Transjordan, Iraq, India and Malta. We left Plymouth on the 29th in an Iris flying-boat, an all-metal aircraft built by Blackburn and powered by three Rolls Royce Condor engines of 650 h.p. each. The total all-up weight was about 30,000 pounds, and the cruising speed 80 knots. The crew consisted of Squad.-Leader Scott, a very experienced flying-boat pilot, a second pilot, two fitters, a wireless operator and a rigger.

Compared with the speed of present-day air travel our timetable must seem very leisurely. In all we covered just under 16,000 miles in seven weeks. At Naples we were entertained by General Balbo and the Marquis de Pinedo, both famous figures in Italian aviation. At Aboukir we changed into Fairey IIIc aeroplanes which took us to Cairo, and thence to Khartoum and back. To Baghdad we flew in Wapitis, a single-Jupiter-engined

general-purpose machine, successor to the D.H.9A. The R.A.F. were still at Hinaidi as the new air station at Habbaniyeh was not yet ready. At Basra we rejoined the Iris and left for Karachi. *En route* we spent one very hot night at Hendjam, an island at the southern end of the Persian Gulf, with the Navy as our hosts in H.M.S. *Crocus*. Early the following morning we failed three times to take off from the glassy calm sea, but on the fourth attempt we "unstuck" after a run of over 2 miles. The strain was too much for one of the engines, which gave trouble as we were passing Jask and we stayed the night there at the cable station, the one remaining building on Persian soil which still flew a British flag.

At Karachi we changed on to a Handley Page Hinaidi with two Jupiter engines and a cruising speed of 90 m.p.h. In this machine we flew round the various R.A.F. stations of Air Marshal Sir Geoffrey Salmond's command. It was a memorable eight-day trip, my first experience of India, and I was much impressed with all I saw and of which so much has been written by famous people.

Perhaps the two flights which interested me most were those from Lahore to Peshawar and from Peshawar to Quetta. On the former one can see the wonderful irrigation system of the Punjab, the result of British enterprise in India of which one hears so little, and the latter along the rugged mountainous frontier of Afghanistan, which gave me some idea of the difficulties of frontier operations.

Lord Irwin, the Viceroy, entertained us at Simla before we left Karachi on October 24th in the Iris on our way home. Nearing Jask our starboard engine packed up altogether and we had difficulty in maintaining height on the remaining two, but they kept us in the air long enough to reach the small bay which gave sheltered water. This time we were to experience something of the new Persian regime. Our passports were demanded, and it was with some difficulty that we eventually obtained permission to continue our flight in a relief machine which was sent from India.

We continued by way of Baghdad and Cairo where, after a few days, the Iris, with a new engine, picked us up and took us home via Benghazi, Malta, Naples, Marseilles and Hourtin. It was a most interesting tour and of particular value to me as Director of Equipment, for I was able to see how very well the R.A.F. overseas were developing even with such obsolescent aircraft and equipment as we were able to supply out of the modest sum voted annually by Parliament.

It was becoming obvious that the biplane was beginning to

reach the limit of its development in regard to performance, yet there was no sign at that time that air operations would extend to spheres where enemy air opposition would be encountered demanding high performance.

No threat from the Continent was in sight, in fact there was even talk of a future disarmament conference. Under the circumstances, increased reliability and extra load-carrying capacity were considered as the main requirements for aircraft employed in the various oversea commands on police work with no air opposition. Naturally enough the Home Defence fighters and bomber squadrons got the first supply of any new types in production, but development, at this period, was very slow, and any improvement in performance was usually due entirely to increase in the power of the engine. For instance, the Gloster company, within a period of ten years or so, produced in sequence the Gamecock, Grebe, Gauntlet and Gladiator, all biplanes, and each of them a slight improvement over the previous one, yet none of them had a speed comparable with the Gloster Schneider Trophy entry of 1927.

One of the branches in my equipment directorate dealt with Messing and the supply of rations in bulk to certain oversea commands. The Public Accounts Committee of the House of Commons, in reviewing the list of items written off charge as beyond repair, mostly consisting of crashed aircraft or engines, noticed that rather a large quantity of cheese had been dumped in the sea off Basra. Enquiries were made as to the reason for this waste of the odd hundred pounds or so. It fell to my lot to attend their meeting, and to explain, with all humility, that the officer concerned with despatch had shipped the cheese a fortnight too soon, and that the Red Sea and Persian Gulf had been too much for it. The loss of a comparatively small quantity of cheese was to be deprecated, but the saving of thousands by careful provisioning or salvage of aircraft passed unnoticed.

My four years as Director of Equipment came to an end in March 1928 and I became Chief Staff Officer to Air Vice-Marshal Charles Longcroft at Inland Area Headquarters, Bentley Priory, Stanmore.

I had thoroughly enjoyed my long spell at the Air Ministry, for the work had been really interesting and pleasant under my immediate chiefs, Sir Geoffrey Salmond and, later, Sir John Higgins. I also had many dealings with the Chief of the Air Staff, Sir Hugh Trenchard, who was intimately concerned not only with

maintaining the independent existence of the R.A.F., which he did through many crises, but also in getting full value for money out of the fifteen- or sixteen-million-pound limit to our annual expenditure. By 1929 he was in his tenth year of office, and at the end of the year he handed over to Sir John Salmond.

In my diary of this period I have recorded that the Air Force was thriving, that the Indian Air Mail Service was running and that Squad.-Leader Jones Williams had flown the Fairey long-distance aircraft direct to Karachi in fifty hours.

By this time the policy of air control had been extended to the Aden Protectorate and was proving most effective in operations based on the experience of Iraq. There had also been the wonderful achievement of evacuating from Kabul to Peshawar some 600 Europeans in Vickers Victorias, when danger threatened after Amanullah's regime had ended rather abruptly.

Incidentally, Seagrave had put the car speed record up to 231 m.p.h. at Florida in March (1928), which was faster than the fighters of that period.

The Inland Area Command consisted mostly of flying and technical training stations of which there is little of outstanding interest to record. Little or no expansion was taking place, so that staff work was purely a matter of routine.

The summer of 1929 was a record one for sun and warmth. The R.A.F. display at Hendon surpassed itself, and the Schneider Trophy Race, run on September 7th, was won by Flying-Officer Waghorn in a Rolls Royce Supermarine Monoplane at over 320 m.p.h. against a strong Italian team. This was the first occasion I had seen a really fast aircraft, for which one had to look ahead of the direction of its sound.

To see this race, which was run round a triangular course in the Solent, I hired a small Thorneycroft motor-cruiser. We had a splendid view of the race near the turning-point mark-boat in Cowes roads. As in 1927 the British pilots came round in a wide sweep, maintaining their speeds, but, as before, the Italians cut it fine, missing the masts of the yachts and, indeed, Osborne Castle itself, by a narrow margin. The radio commentator on Ryde Pier was giving us news of the race, and when this wild Italian came along low down towards Ryde we heard: "This chap's coming pretty low—by Jove, he is coming low—Good Lord, he's going to hit us." After which we heard the loud roar of his engine which must have been very close to the microphone.

After the race I landed at Calshot to congratulate Wing-

Commander Orlebar, the C.O. of the High Speed Flight. I also saw the Italian pilot who caused the commotion; he said that on a tight left-hand turn he could not keep the nose of his machine up, however much top rudder he applied, and that he had had a nightmare flight.

Once again Mr. R. J. Mitchell, the master designer of the Vickers Supermarine Company, and Sir F. H. Royce of Rolls Royce, had shown what could be done by British design and workmanship.

In our motor-cruiser we spent five very pleasant days of perfect weather in the Solent, and my young amateur crew learnt something about navigation and the handling of small boats. In addition to my wife and myself they consisted of the two elder children and Richard Hamilton,¹ a naval cadet. Also Mac our chauffeur and friend of the family who has been with me, at home and overseas, for most of sixteen years. Our only contretemps was to run aground on Bembridge Spit, where we remained, high and dry, at an acute angle for most of the night.

I was not to remain long at Inland Area, and in October (1929) I turned over my Air Staff duties to Wilfrid Freeman, after which I had a few weeks' leave before taking over my new command at Cranwell.

¹ Richard Hamilton was the elder of two boys, whose parents were abroad, and who regularly spent their holidays with us. In 1941 Richard, as a pilot in the Fleet Air Arm, was killed in an air attack on the Italian Dodecanese Islands. His younger brother was subsequently in the F.A.A.

CRANWELL (1930-2)

AT the end of 1929 a few officers in the senior ranks retired from the service and thus made room for promotion for some of those lower down on the list. Since 1919 the strength of the R.A.F. had altered very little and, in consequence, promotion in the permanent officer ranks was very slow. A young flight-lieutenant who had been with me in 1918 in the Adriatic Group, an excellent bomber formation leader, was still in the same rank more than ten years later, and there were many similar cases. In a service such as the R.A.F., whether in peace or war, early promotion on merit is most desirable, but, except during periods of large-scale expansion, the whole object is defeated unless there is a steady exodus from the top. Unfortunately the material question of pensions comes into the picture and some officers stayed on and blocked the way until they had reached the qualifying period for maximum pension or the compulsory retiring age. The short-service system had been designed to improve matters and had certainly done so in the junior ranks, but flight-lieutenants and above had to wait and hope for a lucky "draw" either when the next expansion took place or after some of their seniors had faded away for one reason or another.

On December 16th (1929) I took over from Air Vice-Marshal Frederick Halahan as A.O.C. Cranwell and Commandant of the R.A.F. College. Cranwell had grown considerably since the day in 1916 when I first saw it. The camp was divided into two: West Camp, which housed the Cadets and the instructional aircraft flights, and East Camp, the home of the electrical and wireless school. There were two large landing-grounds, known as North and South Aerodromes respectively. The total strength of both camps remained about 1,500 during my three years in command.

Owing to the very long run which could be obtained in an east and west direction on the main South Aerodrome, it was selected as the starting-point for any long-distance flights. It was here that Squad.-Leader Carr, with his navigator, David Bett, had started on their flight to Karachi a year or so before; it had ended in their forced landing in the Persian Gulf. It was from this aerodrome

also that Squad.-Leader Jones Williams had left in the Fairey for the same destination, which was reached successfully.

Jones Williams started once more with Jenkins as his navigator on December 17th (1929), this time for South Africa. Their Fairey high-wing monoplane, with a 450 h.p. Napier Lion engine, had been specially designed for the purpose and was well fitted up inside the fuselage with everything required for a three-day non-stop flight. We watched their long take-off in the early dawn until the machine gradually disappeared from sight, climbing very slowly with its heavy overload. After successfully crossing the Mediterranean direct on their course, and just after passing Tunis about midnight, they hit the top of one of the mountains south of that town and were both killed outright. It was thought that the aneroid must have been giving an incorrect height reading, due to a drop in barometric pressure between Cranwell and North Africa, and that, in consequence, they were not so high as they thought. The loss of these two very popular officers, John Willie and Jenks, as they were called, was keenly felt by their many friends, and particularly so at Cranwell. However, there were others to take their places, and true to the tradition of the R.A.F. in such cases—a tradition inherited from the R.F.C. and R.N.A.S.—the normal programme of Christmas festivities went on as usual.

On the 1st January 1930 I was promoted to Air Vice-Marshal at the age of forty-five and after five and a half years' service in the rank of Air Commodore. My tenure of command at Cranwell had certainly started well, and it was a pleasure to have taken over a going concern which needed no new broom to tidy things up.

The foundations of the new college had been laid the previous year, and were being given time to settle before completion of the main structure. The cadets, numbering about 120, were living in the old quarters consisting of wooden huts, and a long straggling building provided dining accommodation and anterooms. Various other detached huts had been converted into lecture-rooms and laboratories. The modest brick bungalow occupied by the King when, as Prince Albert, he was on the staff in 1918 was reserved as a senior officer's quarter.

Cadets came to Cranwell from two main sources, the majority after passing the half-yearly exam. common to Woolwich, Sandhurst and the R.A.F. Cadet College. A candidate could give his order of preference for the three colleges at the time of sitting for

the exam. He could, if he so wished, put his name down for Woolwich first and Cranwell second. This meant that if he got sufficient marks he would go to Woolwich, but if he failed to do so, yet came within the Cranwell zone, he would be accepted for the latter. Many used to put Cranwell as first preference and Sandhurst second, as the competition for Cranwell was usually greater than for Sandhurst. The other source was from Cadetships awarded to outstanding R.A.F. boy apprentices after their three years' training in a technical trade at Halton or Cranwell Electrical and Wireless School. A few King's and Honorary Cadetships were occasionally awarded in special cases.

The course at Cranwell lasted two years and aimed at a combination of flying training, instruction in service subjects, and higher education: a syllabus suitable for those destined to form the bulk of the permanent officers of the service. There were frequent adjustments as between the periods allotted for flying and education. The tendency was to increase the flying hours to keep in step with the flying training schools which were turning out short-service pilot officers and sergeant pilots.

Each half-year, in July and December, some thirty cadets became pilot officers and passed out into the service squadrons. It sounds a ridiculously small number, and there were some who thought the whole system was waste of money, their argument being that all permanent officers could have been chosen from those with short-service commissions, *plus* those commissioned from the ranks who had proved themselves in service. The fact remains that those young officers who were trained at Cranwell were welcomed by commanding officers of squadrons because they were well disciplined and already had some knowledge of the service, in addition to being equally as good pilots as those from the flying training schools. Efficient staff work and good administration are as necessary to the Air Force as they are to any other service (or commercial) enterprise.

I found, on arrival, that the cadets were divided into two squadrons, each with a cadet under-officer, three or four N.C.O.s, and its quota of first-, second-, third- and fourth-term cadets. The competition between these squadrons in all activities was considerable, whether in flying, games, boxing or athletics.

Douglas Bader and Paddy Coote were the two under-officers during my first term. Both were outstanding characters; Bader had come from a public school direct, and Coote had been selected from one of the boy apprentice schools.

Douglas Bader, soon after leaving Cranwell, lost both his legs in a crash, and was invalided from the service. In 1939, when the Second World War started, he somehow managed to rejoin as a fighter pilot. It was not long before he distinguished himself and became a fighter wing leader, gaining many air victories before finally being taken prisoner whilst on a fighter sweep over France. The story goes that a spare pair of legs were dropped for him over France, but that the Germans took them away from him every night to stop any further attempts to escape. A grand fellow, he came back to the R.A.F. once more after the collapse of Germany.

Paddy Coote, in 1941 a wing-commander, was lost leading a formation of six Blenheim bombers in a low attack on the German columns pouring through the Monastir Gap during their invasion of Greece in April 1941. His whole formation was shot down by M.E. 109s. He was one of Cranwell's best products, and a worthy holder of the sword of honour which had been awarded to him eleven years before.

At Cranwell they were both natural pilots and good at games. They played cricket and football, swam and boxed. At the end of the term, competition between the two squadrons had become very keen. Bader had very nearly knocked Coote out in the first round of the boxing with a whirlwind attack, but Coote, the better boxer, had won. Points were about even between the squadrons, and there was only the cricket match to be played. Coote's side had made about 120 all out, Bader's was now batting with the score standing at 50 for 7 wickets. The situation looked hopeless, but Bader had got his eye in. The score rose to 90 for 9 wickets, the last man in was a complete rabbit, and only a straight ball was needed to finish him off. Bader took the bowling each time by running two's or four's and a single on the last ball of the over; the score crept up to 110. The last ball of the next over he hit rather too hard, ran his usual single, but the fieldsman let it run on to the boundary to score four. The rabbit got the bowling and was out in a ball or two. It was fun to watch, and typical of Douglas Bader to persevere in what looked to be a hopeless situation. Even after he had lost both legs, he made his dummies serve their purpose for squash, golf and dancing. With a slight increase in the number of cadets in the following term, we formed three squadrons, which gave opportunity for an extra cadet under-officer and some more N.C.O.s.

The aircraft on which cadets received their flying instruction consisted of Avros with radial Lynx engines, very similar in many

respects to the type in use fifteen years before, Hawker Harts with Rolls engines, Armstrong Siddeley Atlas two-seaters and Siskin fighters, both with Siddeley Jaguar engines. The Chief Flying Instructor was, firstly, Squad.-Leader Arthur Coningham, and later, C. N. Lowe, a Rugby International. Instructors included Dermot Boyle, Charlie Appleton, David Atcherley, Gibbs and many others who were to distinguish themselves ten years later.

My cousin, Wing-Commander Strath Evill (later Vice-Chief of the Air Staff) remained on as assistant commandant until 1931, when Philip Babington (later Air Member for Personnel) took his place. Among those who dealt with the higher education were Professor Sinnat and Professor de la Bère, who did much for the College and was popularly known as the "Prof." De la Bère was largely responsible for the armorial bearings of the College, which consisted of three cranes with drooping wings, surmounted by the figure of Dædalus. The family of Cranwell, who lived in the district in the thirteenth century, had as their crest a crane. "Dædalus" came from the days when Cranwell was H.M.S. *Dædalus* under naval regime. The legend *Superna Petimus*, "we seek the things that are above," was most appropriate.

Various prizes were awarded for the different subjects which formed part of the training, the most sought after being the Groves Memorial prize for the best flyer of the term. It was judged by experts from the Central Flying School a few days before the end of the last term. The prize was given in memory of Air Commodore Bob Groves, who had been killed in a Bristol fighter in Egypt soon after the last war. He was the brother of Mrs. Halahan, wife of my predecessor at Cranwell. The sword of honour was awarded to the best all-round cadet of the term, and the selection rested with the Commandant. It was sometimes very difficult to choose between three or four equally good cadets, but my assistant commandant and the officers immediately concerned with the training of the cadets were usually able to make a unanimous recommendation.

Our relations with Sandhurst and Woolwich were excellent. We compared notes on the system of training, and the cadets of the three colleges competed in athletics, boxing, rugby, hockey and cricket. Cranwell specialized in rugby and were frequently successful in their matches with the other two establishments. Bill Tyrrell, the principal Medical Officer of Cranwell Hospital, and himself an Irish International, helped to coach the team and attended most of the matches. His antics on the touchline in

registering approval or dismay at the efforts of the cadets were well worth watching, and he added to the excitement of the proceedings.

Cadets were allowed motor-bicycles whilst at the college, and the casualties which resulted were far higher than the accidents from flying. It became a serious problem which we attempted to cure by restricting horse-power, permitting three-wheelers, and finally small-powered cars. However, accidents still continued and it was apparently as easy to "roll" a three-wheeler as to fall off a bicycle.

Though it was not encouraged by the cadets themselves, their parents occasionally visited the College and sometimes stayed at my official house. They seemed to be much impressed with what they saw, judging from the complimentary letters I received. One wrote: "I learnt much during those few days, and if I had five sons I could not wish anything better than that they should join the R.A.F.—I was immensely impressed by the high ideals of all those I met and I consider myself fortunate to have my only boy in such a service." Another wrote: "I was much struck by the spirit and go of the whole thing."

Rigid discipline was essential; there were laws which were not to be broken and a scale of punishment to fit the crime. Twice during my three years as Commandant I had to deal with really serious misdemeanours and I sacked the cadet concerned on the spot. I was taking a risk because the Air Ministry might not have confirmed my action, but they did so on both occasions and all was well. Half-hearted action leading to procrastination and long-drawn-out correspondence is not effective in such circumstances.

One lad was unfortunate enough to commit a minor crime for which the punishment was merely restrictions and confinement to camp. It stopped his Easter leave, and his mother was furious about it. She rang me up on the telephone and said that she understood the boy was to be fed on bread and water and kept in solitary confinement; she asked who was there above me to whom she could appeal. As it was already Thursday in Holy Week I said that the Archangel Gabriel was the only one I could think of for the moment. At that she laughed, and eventually I suggested that she could come and stay at my house and see how her boy was progressing on his imaginary diet. He was a nice lad, spent some of his time at our home, and his mother was reassured.

A small percentage of cadets of each term turned out to have no aptitude for flying and had to be disposed of somehow. It was

a defect in the system of entry that candidates were not tested in the air before they became committed to the flying service. Not until the 1940s did we introduce the system of grading schools which determined the suitability of lads for training as pilots.

It stood to reason that having passed the entrance exam. common to all three colleges, a boy turned down for flying should be eligible for Sandhurst, for which the qualifying marks were invariably lower than those for Cranwell. By arrangement with the Sandhurst commandant I did actually transfer two cadets who were making insufficient progress in flying, but were promising in other respects. The War Office accepted the arrangement, but after that the Air Ministry stopped it and the problem of disposing of cadets found temperamentally unsuited to flying remained to be solved later.

Recreation for the cadets was well provided for, as physical fitness was considered of great importance to enable pilots to stand up to the strain of service flying, in which aerobatics were playing such a prominent part at that time.

In addition to playing-fields, athletic stadium and swimming-bath, we had a pack of beagles hunted by Flt.-Lieut. Pyper. This officer had lost his arm in the last war but in spite of this he was regarded as one of the best masters of beagles in the country. The Lincolnshire heath hares provided excellent sport and the farmers played up well.

Activities in connection with cadets were confined to the West Camp, divided from the East Camp by a small wood in which was situated my official residence, known as Cranwell Lodge. Thanks to the first Commanding Officer of Cranwell, Sir Godfrey Paine, this house had been converted in 1916 from an old farm into a really comfortable home with scope for entertaining on a modest scale. My wife and I moved into this house soon after I had taken over, and our children had the advantage of the amenities of the camp during their holidays, which coincided with the college vacations.

The East Camp accommodated the staff, airmen and boy apprentices of the electrical and wireless school, commanded by Arthur Godman and later by Henry Verney. As its name implies, this school trained the future R.A.F. technicians in those trades, as well as signal officers to supervise them. The system of training boy apprentices for the technical trades of the service was proving most successful. Boys of fifteen, recommended by their school-masters, who wished to make a career in the ranks of the R.A.F.,

could sit for the entrance examination. Those who passed were able to state their trade preference. Apprentices who were to be fitters, riggers or armourers went to Halton, clerks and accountants to Ruislip, and Cranwell took the electrical and wireless trades.

After three years they passed out, at the age of eighteen, and served for a period of twelve years with good chances of promotion as well as extension of service, sufficient to enable them to qualify for pension. These airmen, so trained and well imbued with the discipline and spirit of the service, formed the backbone of the ground staff. They had excellent opportunities for advancement, first as youngsters, when they could be specially selected for cadetships, or later for commissioned rank in their specialist trade.

East Camp was well supplied with all the latest radio equipment, and it was most interesting to watch the stages of development and training. George, the robot gyro control for aircraft, made his appearance whilst I was there, and as he was stripped naked and suitably laid out for instructional purposes, one could get some idea of how he worked. The new Fairey long-distance machine had George fitted, and Squad.-Leader "Uncle" Gayford took me on a flight to demonstrate this new automatic control, with which I was duly impressed. He said that George did not always behave nicely and sometimes chose awkward moments, at night or in the clouds, to become temperamental, but it didn't matter so much if blind-flying instruments were fitted, because then one could detect his wanderings and resume control.

As it was necessary to teach the practical application of wireless signalling between air and ground, the wireless school had an assortment of aircraft which operated from the South Aerodrome. We thought, at that time, that air congestion in the vicinity of Cranwell had reached its maximum, and rules for controlling circuits, landings and take-offs were carefully laid down. Little did we know what it would be like ten years later.

With two large units sharing certain of the amenities of the camp, it was necessary for the Station Headquarters to exercise control in matters which affected them both. In exercising my powers as the Air Officer Commanding the station, I was most ably assisted by Wing-Commander Malcolm Henderson, an officer with one leg, yet most annoyingly steady at golf. One morning, during an inspection of the camp, I came to a hut which was locked. I asked Malcolm what was in the building, but neither he nor the warrant officer could enlighten me, except to say that

it was not in use as far as they knew. The keys were sent for and the door was opened to reveal the remains of a recent fire in the stove, some desks and a tall upright cupboard. All present still seemed puzzled, so I said: "I'll bet there is a skeleton in that cupboard." I opened it and there was a skeleton, its bones jibbering in their spring mountings, the explanation being that the hospital had appropriated this disused hut and were using it for lectures on anatomy.

Social life at Cranwell was full of amusement and activity, as was to be expected with such a large and self-contained community. A reasonable number of married quarters were available, those for the officers consisting of rather dilapidated huts, nicknamed by the bachelor officers "Harmony Row," but good enough to house a cheerful band of young wives, most of whom entered wholeheartedly into the life of the station. Tennis-courts, swimming-bath and golf-course were open to them at certain hours; there were the beagles for those who wanted some strenuous exercise or an excuse for a large tea at the house of an hospitable neighbour, whose land had been hunted over. An enterprising Amateur Dramatic Society regularly produced plays, of which the most ambitious was "The Ghost Train," and the funniest "Hay Fever." The station had its own cinema, and there were occasional dances in the officers' mess.

The Church was a great feature of the station and, at that time, quite unique, as it had been converted for the purpose from a large aeroplane hangar and was able to accommodate a congregation of over 1,500. Four-bladed airscrews of last-war vintage hung from the roof girders and carried the electric light fittings. The banners of the original R.F.C. squadrons which went to France in 1914 were suitably displayed on the walls of the nave, and the Cross on the altar was made from the blades of a wooden propeller. In the summer the sliding doors of the hangar were opened, giving a fine view of the Lincolnshire heath, with Lincoln Cathedral standing up in the far distance to the North.

The Rev. John Jagoe, senior chaplain, conducted services which were attended not only by the station personnel but also by many from the surrounding countryside. The Cranwell band, some thirty strong, provided stimulating church music, and it was a fine service altogether with lusty singing. No one could come out of that church on Sunday without feeling the better for it, and no greater compliment could be paid to its chaplain. John Jagoe christened most of the infants born at Cranwell in the special

font improvised from old engine parts and propeller blades. On the Sunday nearest to Armistice Day in each year, a special service was arranged, for which some distinguished Church dignitary was invited to preach the sermon. We were honoured, on one occasion, to hear Dr. Temple, Archbishop of York (later to be the Archbishop of Canterbury), who stayed with us at Cranwell Lodge for the occasion. He impressed us all as a very human person with a refreshing sense of humour. At dinner he remarked that he had looked up an Air Vice-Marshal in a book giving the order of precedence and had found that he came immediately after a Master in Lunacy. It was sad indeed to read of his death soon after he had become Primate.

From time to time lectures were given by those who had taken part in some interesting flight. Lady Bailey described her trip to the Cape by the west route, and Flt.-Lieut. Sawyer told us of his experiences in the cruise of the R.A.F. Far East Flight. This had taken place in 1927, when four Supermarine Southampton flying-boats flew to Australia via Singapore, then round Australia up to Hong Kong and back to Singapore, where they remained for coastal reconnaissance duties. It was a cruise carried out to a definite time-table, and those taking part under Group-Captain Cave-Brown-Cave were justly proud of their achievement as well as of their flying-boats and the aircrews who kept them serviceable.

During the summers of 1930 and 1931 I commissioned a small private aeroplane bought from the Blackburn Aviation Company. It was called a Bluebird and had a 90 h.p. Hermes air-cooled engine. It was used frequently for taking up some of the youngsters for their baptism of the air. All our four children were pleased at the experience, particularly the two eldest, to whom I gave quite a lot of dual instruction. Once again I took up my mother, who had not been in the air since her original flight with me twenty years before. As the seating was side by side, and as there was a good windscreen, it was a comfortable flight. In the evening, when service flying was over, there would be quite a queue of youngsters waiting for their first flight—boys with ideas on joining the R.A.F. received preference.

I used the Bluebird to fly down to Lympne with my son Dick, where we stayed in great luxury with Philip Sassoon. No. 601 Auxiliary Squadron, of which he was Honorary Air Commodore, was in camp at the aerodrome, and I met some of the members including Nigel Norman their C.O. This voluntary enterprise had

turned out most successfully, and the efficiency of the Auxiliary Squadrons was almost higher than that of some of the Regular units. This was principally due to the fact that the Auxiliaries were not continually changing their personnel to meet oversea drafting requirements.

In 1931 the Bluebird was entered for the King's Cup Race and was flown by David Atcherley. After a successful start from Heston he had to retire at Leeds owing to a burst petrol tank. The race was won, on handicap, by another machine of the same make.

Another form of transport which we found most useful was my Chevrolet bus, which could take a football or cricket team, and was frequently used for the purpose, as well as for conveyance of family parties to dances or race meetings.

Cranwell was well placed for hunting, being on the boundary between the Belvoir and the Blankney. We had a thriving hunt club, the membership of which was open to cadets as well as officers. Charles Tonge, at that time Joint Master of the Belvoir, with Peter Akroyd, turned a kindly eye on technical misdemeanours such as overriding hounds, due either to lack of control or over-enthusiasm. Vernon Willey (now Lord Barnby), Master of the Blankney, had a kind word for the young whatever they did.

I had a grey mare, Gypsophila, and a chestnut, Derravaragh, both good performers. My daughter also had a useful horse, and we had many good hunts together, with one or other of the two packs. In the 1932 R.A.F. race at Blankney I ran second to Henry Verney with Gypsophila. There was a good entry, and the race was started by Lord Londonderry, the new Air Minister.

Round Cranwell there were many young members of the Belvoir Hunt Pony Club, for whom I was asked to arrange a paper-chase. Instead of the ordinary rather uncontrolled scramble, resulting in sweating long-coated ponies and cursing grooms who had to cool them down, I tried a new scheme with much success. One of the older children was selected as huntsman, two others as whippers-in, and half the rest as hounds. I had previously laid the trail; white paper for the line to follow; blue paper representing a fox gone to ground and therefore a pause for a breather; red paper for a kill. Then there would be a reasonable interval while a new huntsman, whippers-in, and a fresh lot of hounds were detailed, and a similar line would be followed back to within reach of a large-sized tea. Parents were allowed to ride as the field, under the control of a fieldmaster. The idea caught on elsewhere, I believe, for it taught something of the technique of hunting and

didn't lead to a lot of ponies and children in a white lather at the finish.

In the outside world various events of interest took place during my three years at Cranwell. On October 4th, 1930, the Airship R.101 crashed at Beauvais, whilst *en route* to Egypt. As a result, Lord Thomson, the Air Minister of the Labour Government, and Sefton Brancker, Director of Civil Aviation, were killed, as well as some forty-five others, either crew or passengers. It was a sad blow, and finally sounded the death-knell of the airship, so far as this country was concerned. I attended the funeral, which entailed a march from Westminster Hall to Euston Station and, at the other end, from Bedford to Cardington, where the actual burial ceremony took place.

In April 1931 I lost an old friend, Air Commodore Tony Vesey Holt, who had been in one of the first courses at the Central Flying School in 1912 and had served throughout the War with the R.F.C. in France. He was killed in an air collision whilst being piloted in a Moth by Flt.-Lieut. Mike Moody, who had served with me at Cranwell. His escort got too close and cut off the tail of the Moth. Tony Holt was the Director of Technical Development at the time, and had had much to do with keeping the High Speed development flight in being. After winning the 1929 Schneider Trophy Race the Air Ministry decided that the expense involved in backing another effort in 1931 was not justified. The racing aircraft were still available, and it only needed £100,000 from some source to enter a team with a good chance of winning for the third year in succession. By the conditions of the award this would mean the retention of the trophy and the end of the contests.

The beginning of the economic snowstorm was in sight and the money was not forthcoming from Government sources, but a very public-spirited woman came to the rescue, Lady Houston. She backed the venture to the tune of £100,000, and a team was duly entered. The course was the same as before, round the Solent, but it was a walk-over for the British, as neither the Italians nor the French team turned up. Boothman flew round the course at a comfortable cruising speed of 340 m.p.h. in the Supermarine S.6B with its Rolls engine, now stepped up to 2,300 h.p.

Immediately afterwards Stainforth went for the world speed record, but only got 379 at the first attempt. He increased this to over 400 m.p.h. a few days later, a record which stood for some time.

Our previous attempt at the speed record had taken place on May 12th, 1928, after the 1927 Schneider Trophy Race, but the pilot, Kinhead, was killed during the flight by hitting the water during one of his runs. His portrait hangs in the gallery of honour at Cranwell Cadet College.

To those who would ask what is the use of these races and world record attempts, I would reply that we owed the Spitfire to the Schneider Trophy Races. It forced the designer of the airframe to try new methods and take big technical risks which he would never otherwise have done. History records how nobly Mitchell, of Vickers Supermarine, rose to the occasion, and how he subsequently designed the 8-gun fighter on similar lines before an incurable illness, which he had been fighting for months, deprived this country of one of its best designers. Rolls Royce, maker of the world's best car, had already many aero engines in service. I had seen one of their Kestrels on the test bench in their research department running all out and I had asked about it. The reply was that its horse-power had been abnormally increased and it was going to be kept running at that power until something burst; so far it had stuck it for over twenty hours. That was the spirit which enabled an engine of only slightly greater dimensions than the Kestrel to be boosted up to a power of 2,600 h.p., and to gain for us the world's speed record. The Merlin in the Spitfire and in the Hurricane was the direct result.

My family and I, in our motor-cruiser, watched the fly round in the Solent which won the trophy. Subsequently we acted as direction mark boat for Stainforth's speed record attempt the same afternoon. It was a memorable sight which none of us will ever forget.

In September 1931 the economic storm broke over the country. Great Britain came off the gold standard and pay reductions in all the fighting services were announced. Instead of a 10-per-cent cut on existing rates throughout for all ranks, a complicated scale of adjustments was promulgated in orders which seemed to affect some trade groups and ranks more than others. If there is one thing more than another which the Britisher cannot stand, it is that one section of the community should appear to be getting away with it, and not to be suffering the same hardship or penalty as himself. Trouble in the Fleet at Invergordon resulted.

At Cranwell I became aware that two trade groups had been adversely affected by the new order more than the others. I immediately visited Air Ministry to represent their case, taking

care to do so before the men at Cranwell could state their complaint to me. I found that the naval incident had already had the desired effect and the rates were being readjusted. It looked as if the Ministries concerned had taken the opportunity of including some pay adjustments which had been proposed before the storm broke, and had just tacked them on to the general cut without thinking of what the consequences might be. It was a pity that the effect of the orders, as issued, had not been foreseen by those who authorized their promulgation. My diary records that at this period three million pounds went to the Irish Sweep for the Manchester November Handicap. In the country's worst financial periods, we could still gamble.

Rigid economy was the order of the day in all services, but particularly in the R.A.F. Under such circumstances it was very much to the credit of those responsible at the Air Ministry that the building of the main structure of the new Cadet College was allowed to proceed. In 1932 I saw Mr. West, the architect, frequently on points connected with its construction and fittings, for it was to be ready for occupation the following year. As the central clock tower was the highest point on the Lincolnshire heath, and would have to be lit by air obstruction lights anyway, I asked for an aerial beacon flashing light. Sanction for this had to be obtained from the same authority which dealt with coastal lighthouses, as Cranwell was within fifty miles of the coast. In due course the aerial beacon was approved, and until World War No. 2 started the revolving light could be seen for many miles. Dunstan's pillar, ten miles away, had been lit for the benefit of travellers two centuries ago, to guide them on their journey across the bare Lincolnshire heath. Now the Cranwell aerial beacon helped to guide the night air pilot, and marked an obstruction to be avoided by his fast-moving aircraft.

No old Cranwellian who knew them would forgive me if I failed to mention "Daddy" Dawes and his successor "Grandpa" Sayers, who looked after the Cadets' Mess. Both of them were old soldiers of the finest type; the former started life in a Guards regiment and was later commissioned, and the latter had a similar career in a famous cavalry regiment. Each of them was a guide, philosopher and friend to the cadets, besides being an excellent supervisor of their creature comforts.

What was to have a far more troublesome effect than the economy drive on the R.A.F., and Cranwell in particular, was the Disarmament Conference which opened at Geneva in February

1932. For some time bombing, as an instrument of Air Control overseas, had been criticized by a section of the public, but whether for political reasons or on moral grounds was not very clear. There were times during 1932 when it looked as if the R.A.F., as an independent service, had not long to live.

Parents seeking a career for their sons could be excused if they hesitated before agreeing to their trying for Cranwell. What was the good of committing a boy to a service which looked like disappearing altogether? Our entries from public schools dwindled, but we still managed to get sufficient candidates from those who had set their hearts on flying and were not going to be put off by too much calculation as to the future. The anxiety on this question lasted the whole of that year, yet Japanese and Chinese were at each other's throats at Shanghai, and the League of Nations were still deliberating as to what they could do about it.

Meanwhile civil aviation was going ahead. Hinkler had flown the South Atlantic in a 120 h.p. Gipsy de Havilland Puss Moth—Jim Mollison flew the Atlantic in a similar machine in 1932, and Amy Mollison made a record flight from London to Cape Town and back. I attended the lunch given in her honour on December 19th, 1932. Aviation was going ahead but the chances of the survival of the bomber still looked slender.

Early in 1933 my time at Cranwell was up. I had had three most interesting and enjoyable years helping, in some small way, to mould our future commanders of the air in their early careers. I had been well provided with what I required for the purpose, and my only regret was that there were not more of them to train. I turned over my command to Air Commodore William Mitchell at the end of January (1933).

CHAPTER XII

INLAND AREA COMMAND

I RELIEVED Air Vice-Marshal Borton in command of Inland Area, on February 1st, 1933. The headquarters were still at Bentley Priory, Stanmore, a fine building standing on the top of a hill with spacious grounds, part of which was being developed as a housing estate. At various times it had been the home of the Abercorn family, of Queen Adelaide and later still a girls' school.

Flying training and army co-operation comprised the main air functions of the Command, but there were many other units attached to it for administrative purposes, such as stores and repair depots, armament training practice camps, and the experimental station at Martlesham. As these activities took place at stations spread from Leuchars in Scotland to Weston Zoyland in Somerset, there was plenty of travelling to be done, and I had a comfortable Audax aircraft and an expert pilot in George Heycock to take me on visits of inspection.

It was a difficult period in which to retain the wholehearted enthusiasm of all ranks in their training, as our Government representatives were still showing a lead at Geneva in the disarmament discussions. We always seem to find ourselves taking a lead in international affairs. Like many others, I was astonished at the persistence of our Ministers, in view of what was happening in Manchuria. The Japanese had actually started operations against the Chinese in Jehol province. Our only reaction to this blatant act of aggression was to declare an embargo on the export of arms to both countries.

On February 20th (1933) at Geneva, Lord Londonderry, Secretary of State for Air, made a statement on British policy. It was to the effect that the United Kingdom Government were prepared to subscribe to universal acceptance of the abolition of naval and military aircraft and of air bombing, except for police purposes, *provided only* that there could be devised an effective scheme for the international control of civil aviation which would prevent all possibility of the misuse of civil aircraft for military purposes. The result of a mere abolition of military and naval air forces without effective means for the international control of civil

aviation would only be to enhance the menace of indiscriminate bombardment of the civil population of great cities.

Finally, Lord Londonderry referred to the "grave possibilities of unrestricted aerial warfare." He recalled that aviation was only in its infancy and that the committee was considering a convention to safeguard the future as much as the present. He further promised the earnest determination of the British delegation to collaborate in devising, if at all possible, a practical scheme, which would "give to all nations a real protection against horrors to which imagination can put no limit, while preserving for their use and convenience the beneficent development of peaceful flying."

Herr Brandenburg (Germany) did not object to supervision provided that military aviation were abolished and that civil aviation did not suffer from control.

M. Pierre Cot (France) wanted internationalization of civil aircraft and the establishment of an international police force. He pointed out that civil aircraft might be rapidly transformed into military weapons. He was supported by the delegates of Belgium, Czecho-Slovakia, Jugo-Slavia, Sweden and Norway.

After this speech at Geneva, outlining the Government policy, a member of the Air Council wrote and asked what were my impressions and how did I think it would affect the R.A.F. I replied that I noted the impossibility of the conditions to be met before the abolition of Air Forces could be accepted. I also noted that there was no reference to America or Soviet Russia coming within the framework of any International control, the possibility of which I thought equally unlikely. On the face of it, therefore, neither as an R.A.F. officer, nor as one of the British taxpaying public, did I have serious apprehensions on the subject. At the same time it could not be denied that the policy of the Government had the appearance of not being averse to the total abolition of military air forces. I went on to say that this must inevitably have its effect on the new entry into our service, whether officers or airmen—an effect, if not on numbers of applicants, at any rate on their standard. With other professions to choose from, parents with promising sons would naturally favour one with a more certain future. I quoted the instance of one public school which had used already this argument to its R.A.F. liaison officer.

The comments I had heard from officers showed that they, too, had recognized the obviously impossible conditions attached to the proposal and were not unduly alarmed as to their immediate future, but they were also surprised that it should be left to this

nation to make such an impossible gesture. As an A.O.C., my immediate problem was to retain the enthusiasm of officers and men for the service and for the more hazardous forms of its training. I concluded that if we managed to do that, it would not be thanks to the Disarmament Conference.

In fairness to the Government and those who were faced with the task of representing its views, one should recall to mind the general atmosphere in the country at that time. The pacifist campaign was in full swing, and the Peace Pledge Union gaining support. Wild young men were talking rank treason and were getting away with it. Anyone who spoke of the Empire was dubbed an out-of-date Imperialist. Many people seemed to have lost their senses and statesmen to be pursuing ideals already fourteen years dead. Had not the United States Congress killed these when they repudiated President Wilson's policy on which the whole idea of the League of Nations was based?

No voices were being raised in protest at our disarmament gesture, with the exception of Winston Churchill's and the *Daily Mail's*. There seemed to be a genuine widespread belief in the minds of many people in this country that we could escape a future war, and incidentally much expense, by giving a lead in disarmament.

At the end of February, Lord Londonderry gave a dinner at his famous house which was attended by H.R.H. the Duke of York, Prime Minister Ramsay Macdonald, and all the senior officers of the Air Ministry and Home Commands. I was privileged to be present and I can remember no reference being made, in the course of conversation, as to the fate which might conceivably be in store for our service. It seemed to be taken for granted that all would be well.

In March (1933) the Air Estimates actually showed a slight reduction from the figure for the previous year. Hitler had become Chancellor and was generally recognized as a sort of Mussolini of Germany. In Manchuria, the Japanese had completely occupied the Province of Jehol.

I have dealt at some length with this period of hysteria in order to emphasize the stability and high morale of the R.A.F. in surviving the epidemic as well as they did.

In April I accompanied Philip Sassoon, who was once again our Under-Secretary of State, on a flying trip to Malta. We left on the 13th from Calshot, in a Rangoon three-engined flying-boat built by Short's. Our first pilot on this occasion was Flt.-Lieut.

Carter, who had recently come to flying-boats and regarded them as aircraft and not as sea aircraft necessarily confined to flights over water. He took us due south from Calshot, and cut across France from St. Malo to St. Nazaire, instead of going the long way round by Ushant. It was refreshing to see this new outlook towards the flying-boat, even if at times we did brush the tree-tops, for the cloud ceiling was low that morning.

We reached Marseilles by the same route as we had taken five years before. On the 15th we arrived at Ajaccio in Corsica, and were most hospitably received by Captain Guy Royle of the aircraft carrier *Glorious*. Except for a short period when he was gunnery commander of the *Marlborough* in the Grand Fleet, I had not seen my friend since we were shipmates in the *Good Hope* twenty-five years before. There was much leeway to be made up in the telling of our experiences during the intervening years.

The Navy have an excellent method of inspecting a ship's company, "muster by the open list," in which the men are paraded in single file; each one marches up to the inspecting officer, salutes or removes his cap, calls out his name and rank, and moves on. It takes time, but one can get a very good view of each individual man which is not possible in a parade of serried ranks without movement. Our Under-Secretary and those who were watching were most interested in the ceremony, which took place for his benefit on Sunday morning.

A Sunday lunch followed by a picnic ashore and an evening at the ship's cinema completed a most delightful day spent with my old service. Next morning we left for Malta, but before doing so, various officers, including the Captain, were taken up in the flying-boat for a local flight.

We passed through the Straits of Bonifacio, between Corsica and Sardinia, along the air corridor which the Italians had specified for the passage of foreign aircraft when flying in the vicinity of Sardinia. Our course took us down the east coast of that island and past the westerly point of Sicily. Here we met a strong head wind, and I wondered what fuel we had left in our tanks as we had not refuelled after the passenger flights of the morning.

Our light-hearted pilot didn't seem to be worrying and the flight engineer, having pressed the buttons of the electric fuel indicator gauges, looked puzzled, but he knew that they frequently gave wrong readings. Although reading a book at the time, I was subconsciously aware of that fuel problem, but all went well and we sighted Gozo Island ahead before long. Carter then passed a

note to Philip asking whether he would like to see San Antonio, the inland residence of the Governor, *en route* to the seaplane station. I intercepted the note and put on it, "Suggest you keep over the water, your fuel is low." Just as well we did, because all three motors cut dead as soon as he put the nose down to land. The tank sumps had dried out at the angle of the glide and we did a forced landing in Calafra Bay on a fairly heavy sea. We bounced off one wave and met the next head-on, but somehow the bows stood up to it and we were soon in tow and safely secured to a buoy. Twenty-three years' flying experience had led me to make that mental calculation as to our fuel. To be happy as a passenger one should know nothing of aircraft.

At Malta, Philip inspected the well-equipped seaplane station, commanded by Wing-Commander Reggie Marix, and that night we dined with the R.A.F. as the guest of Air Commodore Rathbone, the A.O.C. Next day we visited the small Fleet Air Arm landing-ground at Hal Far; it had been difficult to obtain a site of large area owing to the need for avoiding inconvenience to the Maltese cultivators.

After dining the next night with General Sir David Campbell, the Governor, we left on the 19th April for Rome in an Italian commercial seaplane. It was a two-engined Dornier and was operating on the daily Italian service between Tripoli and Ostia, the port of Rome, stopping at Malta *en route*.

It carried eight passengers in a compartment forward; ventilation did not exist and two priests from Tripoli had, quite obviously, partaken of a garlic-flavoured meal. Added to this unpleasantness it was very rough, both on the water and in the air. However, the Italian pilot knew his job and managed to get the machine off the water by gaining speed in a wide circle on a patch of calm water, finally taking her off head to wind. The Dornier type hull with its flat bottom and side pontoons permitted this manoeuvre, which I had not seen before.

We lunched at Syracuse while the boat refuelled, and thence passed through the Straits of Messina, flying very low in accordance with the regulations. The Dornier refuelled again at Naples, and once more we were treated to a very spectacular take-off inside the rather congested harbour. It was a pleasant flight along the coast to Ostia, our terminal port, where we found docks cut into the banks of the Tiber for berthing the boats so that passengers could walk ashore.

General Balbo, the Air Minister and executive head of the

Italian Air Force, had come to meet Philip and conveyed us at great speed along the Auto Strada to Rome in his Alfa Romeo car. The Dornier thrills of the day were as nothing to the nerve-racking experience of that drive. Mussolini had modernized and speeded up the life of some of his countrymen, but there still remained the less enlightened and those who wandered casually with their waggons on to this new motor highway. My feet were continually pressing through the floorboards and my conversation must have seemed disconnected. The Excelsior Hotel was able to provide what was necessary to restore us to normal.

Balbo looked after us well; he gave us dinner and next day showed us round the new Air Ministry, of which he was justly proud. All the fittings and equipment were of the latest. The offices, except his own, had glass walls and the desks had no drawers in which papers might get shelved. Pneumatic tubes carried correspondence between one office and another; one could get even coffee delivered in a small Thermos flask through the tube.

On the roof were tennis-courts, gymnasium, and swimming-bath; down below a wonderful cafeteria run on the latest lines. The waiting-rooms were decorated in excellent style with good portraits of all the well-known Italian pilots of the previous wars. A map of the ancient Roman Empire at the period of its greatest prosperity was painted on the walls of Balbo's office, with "Mare Nostrum" as the central feature.

I mentally compared this fine new building with our own sombre and rather depressing Ministry in Kingsway, and wondered whether bright, modern, inspiring surroundings were an advantage for the efficient administration of a young modern service, whose development depended on discarding obsolete equipment and methods at the earliest possible moment. I decided that such aids to inspiration were essential to the Italian mentality, and might even be helpful in our own case.

Group-Captain Hetherington, our Air Attaché, gave me the impression that the actual training of the Regia Aeronautica was not up to the standard reflected by its headquarters; all was not gold that glittered. At the same time, there is no doubt that the new flying service, created by Mussolini, owed much to the stimulating influence of Balbo. His flight with a squadron of Italian flying-boats across the Atlantic was a fine performance, and one could not but admire this colourful personality.

It was said that he owed his appointment as Governor General

of Tripolitania and Cyrenaica to the fact that he was becoming too popular a public figure in Italy and particularly in Rome. He was most hospitable to British airmen and airwomen who happened to pass through Benghazi on their flights to or from Egypt.

At the time of our visit to Rome, a Fascist Exhibition was open to the public, consisting of photographs, trophies, posters, etc., relating to incidents from 1914 onwards. There were many pictures of Mussolini at various stages of his career, and a blood-stained handkerchief with which he had wiped his nose after his narrow escape from being shot. Balbo, with long hair and beard, appeared in many photos. A large section dealt with Fiume and the Dalmation Coast, reflecting the strong feeling which still existed on the frontier problem.

The "Room of the Dead" was most impressive, being in semi-darkness with distant funereal music provided by a muted gramophone. Fascist sentries stood at attention and the whole ensemble was a striking tribute to those who died for Italy and the Fascist movement. The young were definitely being encouraged to reverence the "Martyrs to the Cause." It was all very Italian.

Back in England, Sir Edward Ellington had become Chief of the Air Staff in the place of Sir Geoffrey Salmond, whose death had occurred soon after relieving his brother in that post. The loss of this fine officer was a blow to the service. He had the confidence of all who had served under him and, in his high appointments, had shown vision and impatience at any obstacle which threatened to hinder developments. He was a most likeable person in private life, with a very lively sense of humour.

In the flying schools, the training of sergeant pilots was proving quite successful, and all types of squadrons, with the exception of those concerned with army co-operation, were getting their quota. In fighter and two-seater day-bomber squadrons, the question of their status did not arise, but in large aircraft, with two pilots and perhaps two or three aircrew it was sometimes embarrassing when the first pilot was the sergeant and the second pilot an officer. There were many who thought that if an N.C.O. was good enough to be captain of an aircraft with a crew which might also include an officer, he was certainly worthy of a commission. Anyhow, the arrangement worked quite satisfactorily, which was the main thing.

A few armament training camps had been opened during the summer months round the coast, and to these squadrons were

allotted for short periods in order to practise their bombing and gunnery on air and sea ranges. The system was proving most successful; the trouble was that there were not enough of them. Their number was gradually increased and they were kept open all the year round, but every imaginable argument was produced by certain landowners as to why these armament camps should not be established on their land, or anywhere near them. In one case the objection was that there was a nearby swannery, in another that it was too close to the home of wildfowl, and so on and so forth. Actually, the swans and wildfowl took little or no notice of the aircraft, and they produced even bigger and better eggs. Letters were written to the Press on the vandalism of the R.A.F. The Minister and Under-Secretary were inundated with protests. It was uphill work, fighting for efficiency in such an atmosphere, and our motto, "*Per Ardua ad Astra*," could not have been more apposite. In war such difficulties disappear, but in peace the delays involved in breaking down opposition of this sort are a great handicap.

Army co-operation was represented at home by four squadrons specially trained for the purpose; there was also a school near Salisbury where Army officers as well as pilots went through various courses. A proportion of these pilots came from the Army on secondment. The rôle of the squadrons was primarily tactical reconnaissance and artillery observation. The tendency was, therefore, to favour an aircraft with a very good field of vision for the pilot who did the reconnaissance and spotting. The single rear gunner was there to deal with an enemy fighter, and had no other responsibility. The pilot, like an American one-man band, did everything else.

The Audax, quite a useful adaptation of the Hart, was in use for Army Co-operation work at this period, but its successor was handicapped by being specially designed to meet as many of the task requirements as possible. The result was a machine with a fine view but no performance, which soon proved itself incapable of being employed in modern war.

During an army exercise on Salisbury Plain, I was taken up in an autogiro on a reconnaissance. It was an experience which would have been more pleasant if the vibration had not led me to think that the rotor was about to part company with the fuselage at any moment. We hovered here and there over what we went up to see and subsequently landed almost stationary with hardly any forward speed. Having disembarked, feeling rather like Harry

Tate in his famous motor-car turn of years gone by, I asked the pilot about the vibration, and he said that, now I came to mention it, there was a large chip out of one of the blades of the rotor which had unbalanced it. These craft were always credited with having a great future, but somehow their development hung fire. Now, in the 1940s, in a different guise, they seem to be starting a new lease of life, and may prove more successful than their predecessors.

To turn to the lighter side of life at Inland Area, an R.A.F. polo club at Halton was within easy reach of Stanmore, and occasionally I was able to get away for a game. Among those who played regularly was Padre Beauchamp, the Roman Catholic chaplain of Halton, well known in the R.A.F. and to those who hunted with the Whaddon Chase. Halton was fortunate in having a succession of Air Officers Commanding who encouraged both hunting and polo; these included Scarlett, Charles Lambe, Norman MacEwen and Bonham Carter.

Out of the large number of R.A.F. officers who had served in Egypt, Iraq, Aden or India, there were quite a few who had learnt to play polo. It was, therefore, possible to raise some sort of a team to compete against the Navy in the annual match played at Ranelagh. Jack Baldwin, our best player, captained the team when he was not serving overseas. The R.A.F. had one or two wins to their credit against their opponents, who had the strong support of Lord Louis Mountbatten when he happened to be in some home appointment.

From our service home near Stanmore railway station it was no great distance to Eton College, where our two eldest boys were in the Rev. J. C. Chutes' house. I remember that we spent a pleasant 4th of June there, during which I got some idea of the reason for the lasting affection most old Etonians seem to have for this school.

Like many of the best things in British life, a logical analysis in detail would throw the limelight of ridicule on many of its habits, customs and traditions, but to see the procession of boats, to attend the fireworks whilst sitting on the riverside with the young and joining in their songs, is to experience something quite unique which one cannot attempt to describe.

The R.A.F. Display at Hendon in June took place in bad weather. In spite of rain, low clouds and bad visibility, almost every event on the programme was carried through successfully. I was proud to be present on that occasion to see the very high

standard reached in bad-weather flying by the squadrons taking part.

My wife and I gave a ball at Bentley Priory in July (1933) for our daughter. She was then nineteen and had no desire for the usual London season with its round of debutantes' dances. She preferred a course in domestic science and a season's hunting with the Belvoir hounds. That arrangement seemed better value for money and was cordially welcomed by her parents.

Usually one dance is much the same as another, but in this case the setting happened to be out of the ordinary and so did the weather, for it was a really hot night. From the open windows of the fine ballroom one could see the twinkling lights of Harrow away to the south, and beyond that the glow of London. In the immediate foreground, the gardens sloping away to the lake below were lit with fairy lamps, the fountains illuminated with coloured lights and the tree-tops floodlit. Two strolling minstrels, engaged from a show in London, wandered about in gipsy costume, playing an accordion and a guitar. They were almost too great a success, for they rather emptied the ballroom. It was a scene all the more memorable when viewed from the drab war and post-war period. I think our guests enjoyed it as much as their host and hostess. Those from London were pleased to come to a gay party in the country as a welcome change from the stuffiness of London ballrooms.

In September I watched R.A.F. squadrons bombing the target ship *Centurion* off Selsea Bill. This ship had been converted for the purpose and was manœuvred by remote radio control from a destroyer a short distance away. All types of bombing were employed from various altitudes, including precision, pattern and dive bombing, and the results were good, though I have no records of them in detail. There was no doubt that such few squadrons as we had at that time were gaining in efficiency month by month.

In December the twenty-first anniversary dinner of the Central Flying School was held at the Mayfair Hotel. Lord Trenchard took the chair, and among the many present were the Secretary of State, Lord Londonderry, Captain Freddie Guest, Sir Philip Sassoon, and many of the instructors and pupils of the past twenty-one years. The Central Flying School by this time had gained an international reputation, and the flying instructors of many nations were accepted for training in the finer technique of this work.

Early in 1934 a Dress Committee, of which I was once again

a member, reviewed the existing regulations. I did my best to abolish tight mess overall trousers, but was over-ruled. There were too many senior R.A.F. officers who had worn overalls in their young days in the Army, and not enough old naval ones to persuade them that trousers were more comfortable. The changes which did result included the adoption of the blue shirt and collar instead of white, and a mess dress with a gold lace stripe down the overall trousers. As in the case of the Navy, this was to be worn with a white waistcoat in mess dress for special occasions.

At the time of the Air Estimates (1934) presented in the House of Commons by Philip Sassoon, Stanley Baldwin announced that, when there was no further hope of disarmament, then we would bring up our air forces to parity with the most powerful European nation. It was later that year that he made his remark to the effect that Britain's frontier was no longer the Channel, it was the Rhine. It sounded impressive, but nothing much happened as a result. Dollfuss, the Austrian Chancellor, had just been murdered by Austrian Nazis. Hindenburg had died and Hitler had become President. By May it became fairly evident that Germany had started to rearm, and in the same month Hitler and Mussolini met each other for the first time, presumably to talk about Austria.

A combined exercise involving a landing on the Yorkshire coast, was staged in May, and I was nominated as the Air Chief of the invading force. For this purpose I went on board *Nelson*, as the guest of Admiral Sir William Boyle (later Lord Cork and Orrery). Though some two or three thousand men and a few tanks were landed south of Bridlington, it was more of a signal exercise than a tactical one. It was thought that with so much radio and wireless communication there would be much interference and jamming. As it turned out, the results were surprisingly good. I saw one of the new tank-landing craft at work for the first time.

By October (1934) I had completed some twenty months at Inland Area, and was now required for another Command.

COASTAL COMMAND, 1934-6

ON October 1st (1934) I took over command of Coastal Area from Air Marshal Sir Robert Clark-Hall, who was retiring. It was not till 1936 that it became Coastal Command and its A.O.C. raised to the status of A.O.C.-in-C. For the first period of my appointment, therefore, all units were controlled direct from my headquarters at Lee-on-Solent, conveniently situated on the combined aerodrome and seaplane station. An amphibian could waddle out of the Solent up the slipway, taxi on to the aerodrome and take off. It was the only station in the Home commands with this layout, which made it very useful for Fleet Air Arm and communication work.

Coastal Area had two main functions: firstly, the administration and training of units disembarked from aircraft carriers, as well as those from ships which carried catapult aircraft; secondly, command of all shore-based aircraft within the area, such as flying-boats, seaplanes, or torpedo bombers. Seaplane and flying-boat training was done at Calshot.

The general arrangement agreed between Admiralty and Air Ministry was as follows: All aircraft, their crews and attendant personnel embarked in aircraft carriers or on board capital ships and light cruisers came under the direct orders of the Navy. The technical personnel, including fitters, riggers, armourers and wireless mechanics, was provided by the R.A.F. A proportion of the aircrews in the aircraft carriers were Air Force and the rest naval. Aircraft handling-parties in all the ships were sailors. Afloat, the training was the responsibility of the Navy, and ashore that of the Air Force.

It was a complicated system; where there existed the spirit of goodwill and close co-operation, it worked. The trouble was that on the naval side there was always the temptation to accentuate the defects in the system for use as ammunition in their periodical campaigns for entire control, and on the air side there was reluctance to grant any concessions, on the principle that to give an inch was to concede a yard.

The main advantages of the scheme might be summarized as follows: economy in centralized initial training, which was the

responsibility of the R.A.F.; use of accommodation and training facilities for disembarked Fleet Air Arm squadrons available at air stations already staffed by the R.A.F.; the influence of up-to-date fighter tactics resulting from periodical interchange of R.A.F. pilots; above all, the value of the experience gained by sailors and airmen of all ranks in working together as a team.

As the R.A.F. had not even by this time (end of 1934) started to expand, the shore stations under Coastal Area were few. There were flying-boats at Pembroke Dock, Plymouth, Calshot and Felixstowe, and other coastal activities took place at Donibristle and Leuchars in Scotland, Gosport and Lee-on-Solent.

In addition to these, we had the use of aerodromes belonging to the other R.A.F. commands, whenever we wanted to operate coastal reconnaissance, concentrate a striking force of torpedo aircraft or temporarily accommodate a disembarked F.A.A. squadron.

Such was the position at the time I took over. However, I soon found that what we may have lacked in quantity, we largely made up for in quality. On November 1st, 2nd and 3rd (1934), during an exercise with the Home Fleet, which was on passage from Rosyth to Portland, our Supermarine Southampton boats shadowed the Fleet. By the light of well-placed parachute flares, a dummy torpedo night attack was made on a capital ship passing through the Straits of Dover. In these rather cramped and very noisy small flying-boats the aircrews had reached a high standard of efficiency.

My opposite number afloat was Sir Alexander Ramsay, Rear-Admiral Aircraft Carriers, and I took an early opportunity of getting in touch with him. If his flagship carrier, *Courageous*, was at sea and within air range of Lee, it was a comparatively simple matter to fly on board, a performance which always thrilled me.

The flight deck looks so indescribably small as one approaches from a few thousand feet, it seems almost unbelievable that one can perch on board. Then it grows gradually bigger and bigger as the deck-landing pilot makes his approach and finally clatters on the deck with his tail hook firmly held by the arrester wires.

As there must be no loitering on the flight deck, the sailors of the handling-party come along at the double, unhook the wire and guide the machine, still with its engine running, to the forward or after lift. Then the wings are folded, bells clang and down goes the lift to the upper or lower hangar, and finally the machine is wheeled into position and secured. I have described this experi-

ence in the present tense, but the bells of the *Courageous* will clang no more, for she met her end in 1939 after more than twenty years' faithful service.

The Admiral frequently visited me by the same method. In fact he sometimes flew from *Courageous* at sea to Hendon for conferences at the Admiralty and could return on board the same afternoon. Some of the senior officers of the ships with catapults occasionally were launched off in an amphibian Walrus flying-boat for a similar purpose.

The C.-in-C. at Portsmouth was Admiral Sir John Kelly, brother of the officer with whom I had served in Italy. He was affectionately known in the service as "Joe," a great character with a wonderful vocabulary. He had been appointed C.-in-C. Home Fleet after the Invergordon incident and had not taken long to gain the confidence of the lower deck by his inspiring leadership. With his rugged face and white hair he would have looked the part in an Admiral's uniform of any period. It was as much a pleasure to serve alongside him as it was with his brother sixteen years before.

In November (1934) I was received in audience by His Majesty King George V, on my appointment to Coastal Area. His Majesty was greatly interested in the work of the two services and I was privileged to listen to him for some twenty minutes on various subjects, during which he impressed me with his wide grasp of affairs. I was to see him again the following year, and in his R.A.F. uniform as Marshal of the Royal Air Force, which now reposes in a glass case in the front hall of Cranwell College.

I was promoted to the rank of Air Marshal on the 1st January (1935) at the age of forty-nine. It is a title which comes more easily than Air Vice-Marshal to the tongues of those not well versed in the Air Force ranks, but it is difficult to get it spelt with one "l." I was once called an Air Field-Marshal at a local country fête—a pretty compliment.

In February I took a busman's holiday and sailed in s.s. *California* of the Anchor Line to Gibraltar, where I stayed on board the *Courageous* for the Naval spring manoeuvres, as the guest of Rear Admiral Ramsay. These manoeuvres took place off the Canary Islands. The Home Fleet, under Admiral Lord Cork and Orrery in *Nelson*, represented one side, and the Mediterranean Fleet, under Sir W. W. Fisher in *Queen Elizabeth*, the other.

The aircraft carriers *Courageous*, *Eagle* and *Furious* took part

and the Fleet Air Arm from these ships were able to operate on every one of the seven days during which the exercise lasted. I was much impressed at the standard of efficiency reached in the technique of flying off and landing on. This operation could be continued even with quite a heavy movement of the ship, thanks to the arrester wire system.

Machines could be flown off at the rate of about two a minute and landed on, under favourable conditions, at one every two minutes. These times have subsequently been greatly reduced as a result of certain re-arrangements on the flight deck. The *Courageous* was fitted with two accelerators forward, from which all types could be catapulted, without the need for the ship to be turned head to wind. It was still necessary to do this to land them on again.

There were four types of aircraft on board—Fairey Nimrod fighters, Blackburn Baffin torpedo machines, Seal Fleet spotter reconnaissance and Hawker Osprey fighter reconnaissance. It was in one of the latter that I was catapulted off on our way back to Gibraltar after the conclusion of the exercise. The experience was quite thrilling, though the acceleration is not so rapid as in the case of the battleship or cruiser catapult. As a passenger I was merely required to be strapped in tight, to bend forward and rest my head on my arms. The pilot had a support at the back of his neck to keep his head in position. The operation started with the Osprey being mounted on the special carriage which holds it at certain points, the engine was then opened up at a signal from the releasing officer. When all set, down went the flag he was holding, the engineer pulled his hydraulic lever over, and hey presto! we were in the air over the bows of the ship.

As in all cases of naval manœuvres, the umpiring was most difficult, and more so than ever with an air striking force taking part and using torpedoes. The gunnery experts would claim that ships with their Vickers pom-poms and high-angle guns could deal with torpedo aircraft attacks, but on the other hand the results of the naval anti-aircraft shooting up to date had not been very impressive.

During my time with the Fleet I saw one or two torpedo attacks by waves of nine aircraft and it seemed to me that they would have had much more chance of success if these had been synchronized with a high altitude or dive-bombing attack as a distraction to the A.A. gunners. This method of combined attack was occasionally practised, but it required more than one aircraft

carrier to provide the requisite number of machines to do the job at the same moment.

I found it very pleasant and interesting to be a passenger in a warship. Many things had changed in the eighteen years since my *Tiger* days. The loud-speaker system throughout the ship was constantly in use for some routine announcement, and the Commander of the ship could speak on it to the ship's company and tell them how the battle was going.

Each fleet flagship had an R.A.F. Wing-Commander on the staff of the C.-in-C. as adviser on air matters. It was a very good arrangement and amongst other advantages it ensured a steady, though limited, output of senior R.A.F. officers with Fleet experience, who were to be of considerable value to Coastal Command in later years.

The manoeuvres finished on the 12th March, and the two fleets returned to Gibraltar to work out the results and subsequently discuss them at a conference. This was held in a large shed on the mole alongside which the two flagships were berthed. I was invited to attend and to hear the story of the operations unfolded, stage by stage, in a most interesting manner. As some 1,500 officers attended, an amplifier was used, and officers with electrically lit pointers indicated the positions on the large illuminated chart, to which the narrative referred. It was all very well done, and I registered the details of the proceedings in my mind for adaptation to future Air conferences.

I stayed at Gibraltar for a few days and took the opportunity of seeing a bullfight at Algeciras. The occasion was a try-out for young and budding matadors, and the bulls were also young ones. Bullfights have been described in detail by many able writers and this one was probably a poor imitation of those which took place at Madrid and elsewhere, but what amused me very much was the unrehearsed incidents. Every now and then some young enthusiast from the spectators would jump over the barrier into the ring and endeavour to play the bull with a handkerchief or a scarf taken from his girl friend. Usually the police intervened, if the bull wasn't too close, and carried the interrupter off. On one occasion a young man who jumped into the ring was followed by most of his family trying to restrain him. He had to fight them off first while the bull looked on; luckily some picadors intervened to distract the attention of the animal whilst the young man was removed protesting, and the ceremony proceeded.

I took passage back to Portsmouth in the *Nelson* as the guest

of Admiral Lord Cork and Orrery. The voyage was without incident, except for a very well-executed torpedo attack by aircraft on our ship. There was a fair sea running and ships were throwing the spray over their forecastles, but the carrier was operating her aircraft, in spite of this, without any crashes.

In March (1935) Hitler introduced conscription of German youth, and at the same time revealed his air strength, so now we were to expand the Air Force more rapidly. Yet Peace Pledge Union pamphlets and declaration forms favouring disarmament were still being distributed to householders.

The King's Silver Jubilee celebrations were a feature of this summer of 1935. On May 6th the Westminster Abbey ceremony took place, followed on June 16th by a Naval Review at Spithead, at which the F.A.A. flew past the Royal Yacht in formation. As this was regarded as a purely naval show, no flying-boats of Coastal Command took part. Although I pressed most strongly that they should, it was ruled that the two services should confine participation in their respective reviews to their own units. It seemed to me to over-emphasize the independence of the two services, but in my innocence I did not realize that the attitude adopted was influenced by the coming naval campaign to gain complete control of their own air arm ashore, as well as afloat. However, at our air station at Gosport, we provided all facilities for the F.A.A. squadrons which took part in the review under Rear-Admiral Ramsay. In return, I spent a pleasant evening on board *Courageous* watching the fireworks, for that was the night when the "Fleet was all lit up."

The R.A.F. review for His Majesty was held on July 6th at Mildenhall and Duxford. My wife and I attended the lunch at Duxford at which the King and Queen were present, and afterwards saw an excellent fly past of the Air Defence Squadrons. I think we all wished that there could have been more of them.

The Prince of Wales visited Jersey and Guernsey at the end of July, and I flew there in one of the new Short Singapore flying-boats, to bring him back. It was my first visit to the Channel Islands, and, at Jersey, I made the acquaintance of Mr. Davis who owned the schooner *Westward* and regularly raced this fine boat at the Cowes Regatta. I was later to take part on board *Westward* in the schooner race round the Isle of Wight, and I remember being roundly cursed for a landlubber by the owner-skipper for getting in the way of the spinnaker when it was hauled down after a change of course. He had a fine command of lan-

guage and it reminded me of my midshipman days. We won the race easily after a very pleasant sail in a nice breeze.

The Short Singapore flying-boat to which I have referred had four engines mounted one pair in tandem each side above the hull between the main planes. It was the last of the series of biplane flying-boats and was shortly to be replaced by the Short Empire monoplane boat, which, in its service form, was later to be known as the Sunderland. Four of these Singapores had started to fly out to the Far East a few months before; except for one which had crashed on a mountain in Sicily and was lost with all its crew, the remainder reached Singapore in due course.

Cowes Regatta of 1935 was held in beautiful weather, and most of the big racing yachts were competing during what was really to be the last fully representative Cowes week in all its glory. The King raced in Britannia, and, writing from memory, the other J-class yachts out were *Astra*, *Shamrock*, *Endeavour*, *Westward*, *Velsheda* and *Candida*. The 12 and 8-metre class were particularly strong and so were the smaller classes.

We owned *Silvaplana*, a 36-foot 25-knot motor-boat built by Scott Paine's enterprising power-boat company of Hythe. In handling this speed-boat I recaptured some of the thrills of my early naval picket-boat days, and I found my family an excellent and, by then, experienced crew. They each had their jobs, including Nannie, whose seventeen years' service with us had taught her how to mend the cuts and bruises of the aquaplanists or bathers, and also she knew what we liked to eat. In this day cruiser, which had a comfortable cabin and a galley, we saw much of the racing that season.

My racing in the X one-design class was not very successful; something always happened to the tide or the wind if I ever found myself well placed. It was what they called a very hot class, with some most experienced and cunning helmsmen, of whom quite a few were women. Still it was all good fun and a new experience, for although I had sailed and raced the rather heavy boats of the Navy, I had done very little of the real thing with these handy little racing boats.

The R.A.F. had formed its own Yacht Club, of which I became the Commodore, during my time at Coastal. The Headquarters of the Club were at Calshot and races were started from the top of the Castle. I was more successful with my X boat in the annual regatta there, perhaps because there were not so many experts competing. *Blue Nose*, a schooner from the Newfoundland fishing

banks, had sailed over to be present at the Naval Review and she was available for charter by the day afterwards. We invited a large party on board and had a fine sail round the Solent in this beautiful-shaped boat, manned by a few tough Canadian sailors, skippered by an old salt who spun some wonderful yarns.

September brought rumours of Italian ambitions in East Africa. There had been considerable tension between Abyssinia and the Italians in Eritrea. Haile Selassie had been crowned in great state as Emperor of Abyssinia, and his country was a member of the League of Nations. There was much talk of what we should do, and opinions seemed divided on the question of intervention or the imposition of sanctions. I guessed that we should drift along and possibly make some gesture to clear our conscience.

On October 6th the Italians invaded Abyssinia and the League Council met to decide who should be regarded as the aggressor state. History records the outcome and subsequently the occupation of Addis Ababa by the Italians in May of the following year. We had imposed sanctions, and the feeling in Italy against us was running very high.

It is easy to be wise after the event, but it seems to me that when the history of this devastating period, through which we have been passing in the Second World War, and its aftermath, comes to be written, it will record the fact that, had we been able to issue an ultimatum to Italy in September 1935 to stop her aggressive intentions towards Abyssinia, the war of 1939-45 might never have happened. Hitler must have been led to believe that we should, in all circumstances, avoid a war in which we were not directly attacked. It certainly looked like it, judging by our attitude in 1935. Even at the general election in November of that year no great emphasis was laid on the necessity for our rearmament on a large scale and without delay. Some said that a strong rearmament policy would have lost too many votes.

In December I took the passing out of the cadets at Cranwell, and amongst them was my eldest son, who was destined to go to No. 56 Fighter Squadron. He was not long there, however, for he was posted to torpedo bombers at Singapore and accompanied my wife and myself to Gibraltar in the following February. We stayed at the Rock Hotel and saw Dick off in his troopship bound for the Far East early in March.

There were no naval spring manoeuvres on account of the Italian-Abyssinian war, and the situation in Spain was obviously boiling up for a revolution. In fact, there had already been some

incidents which made it unwise for Britishers to visit Spanish places of interest near Gibraltar. I did, however, have a very interesting day on board *Nelson* at sea, during which aircraft from carriers made a dummy torpedo attack on the ship. This time it was synchronized with a dive-bombing attack and was well carried out. We returned to England in the P. & O. *Viceroy of India* on March 6th.

A gradual expansion took place in Coastal Command in 1936. Two groups were formed and I became an A.O.C.-in.C. The Fleet Air Arm had begun to get some of the new aircraft, such as the Shark and the Fairey Swordfish with Pegasus engines, which were to remain in service as torpedo spotter reconnaissance types until well into the Second World War.

Before I left the Command, I was also to see the first edition of the Supermarine Spitfire, which flew at Eastleigh aerodrome. It was a most encouraging sight, but I was not to know at that time that it would take over three years before the type began to flow into the service off the production lines.

About the same time as the first Spitfire appeared, Lord Rothermere's "Britain First," built by the Bristol Company, took the air. It was the civil edition of what was later to be the Blenheim, and with its two Bristol Mercury engines was a great advance on anything of its kind in this country.

In July Germany fortified Heligoland in final defiance of the Peace Treaty, civil war started in Spain, and in France strikes followed each other in rapid succession.

The Olympic Games were to be held in Berlin in August, and I received an invitation from Group-Captain Frank Don, our Air Attaché, to stay with him and bring my second son, Jim. We flew over to Amsterdam in a K.L.M. Fokker from Croydon, and from there in a German Junker 52 to Berlin via Hanover.

We landed at Tempelhof aerodrome, which seemed to be rather on the small side with bad approaches over high buildings. I believe some of them were afterwards demolished for that reason. Signposts in the main airport booking office read: Moscow, Warsaw, Vienna, Bucharest, Rome, Brussels and London. If one followed the signpost direction it would lead through a corridor to where the aircraft for that particular destination would be emplaning passengers.

During the seven days we were in Berlin we saw much that was of interest. Hitler had ordered that an air of international friendship should pervade the proceedings, and it could not have been

better done. The organization of the games was perfect and the various functions went with a swing in a spirit of comradeship. Ribbentrop's party to at least 300 people of all nations was voted a great success. It was a simple meal at some round tables, at which nations were well mixed, and was followed by a high-class musical entertainment. I met many Britishers I had not seen for years who had come over to see the show.

Jim and I were amused on many occasions at various incidents during the games, though I must admit that the performance of some of the British competitors and teams almost made us weep. I remember seeing Hungary play Czecho-Slovakia at water polo; the game was so boisterous that at certain periods the referee had ordered half of each side out of the water for various fouls. The next item on the swimming stadium programme was announced as a semi-final between France and Germany and we thought that now, if ever, there would be an international incident. On the contrary, the French team came along singing some German song, at which the Germans applauded, and a rather tame match ended in a win for Germany.

In the stadium, the winner of each event, together with the second and third, had to attend a ceremony which consisted of their standing on pedestals, the winner slightly higher than the other two, whilst three buxom platinum blondes crowned them with laurel wreaths graded in size according to their placing. At the same time, the flag of the winner was hoisted and the band played the country's national anthem, whilst the Germans stood rigid with right arm outstretched, and mere Britishers removed their hats. If it rained, the ceremonies were postponed till it cleared and then those that were outstanding took place all together. Unfortunately we timed our arrival at the stadium too early one morning, and came in for an accumulation of at least ten ceremonies. How those Germans' arms must have ached, but perhaps they liked to suffer.

To enliven proceedings during the marathon race, a party of young maidens, to the number of about 5,000, invaded the stadium and went through their exercises to the accompaniment of a large military band playing popular music. When a competitor staggered into the arena after his long run, a whistle blew and they all sat down as one. It was a wonderful display of mass organization and the girls looked good physical specimens.

One evening an American baseball team played an exhibition match in the stadium which was flood-lit for the occasion. It was

a fine spectacle, full of movement; perhaps it was a little unfair to compare it mentally with our more sedate first-class cricket matches at home.

General Zander, who commanded the German Air Coastal Command, heard that I was in Berlin and invited me to spend the day with him at his headquarters at Kiel. He sent his communication Junkers down to Berlin to pick me up, and I had a most interesting day looking round one or two of his air stations, which did not seem to have many aircraft. Zander had been a naval officer and was only just getting used to being called a General. He spoke English well and had a lively sense of humour. He told me that he was in Zeebrugge during the British attack on April 23rd, 1918, and was able to give me a vivid description of what happened from his point of view. He claimed that the canal and locks were only blocked for a short time and that within twenty-four hours they had passed a submarine through to sea.

I saw the German naval war memorial to the fallen, which took the form of a high tower shaped like the prow of a Viking ship. A lift took one to the top from which a fine view of Kiel bay could be obtained. Down below was a museum with various relics and pictures, also a large model of the Battle of Jutland as seen from the German angle. I was amused to see their optimistic interpretation of the battle, and I remarked on the fact to Zander, who seemed surprised that I knew something about it, but I left him guessing.

From what little I could see of the dockyard there did not appear to be an abnormal amount of ship construction going on, and I came away from Kiel with the impression that no great expansion was being made in the German Navy or its Coastal Command.

At the conclusion of the Olympic Games, my son and I flew to Frankfurt and took a bus on to Wiesbaden. This picturesque sleepy old town was very different from noisy Berlin with its blaring loud-speaker system, from which there was no escape; even at the Yacht Club on the Wahnsee outside Berlin one of these abominations boomed forth some fresh announcement from the branches of a tree every now and then.

At Wiesbaden we stayed at a comfortable quiet hotel and listened to a good orchestral concert at the Kursaal afterwards. There seemed fewer swastikas about in this peaceful town than elsewhere.

Next morning we took the Rhine steamer down the river to

Cologne, a trip I had always wanted to do. As we steamed along past the famous castles, a small book called *The Legends of the Rhine* told us of their history. The backchat of a party of young American students of both sexes amused us for a time, but the Rhine wine was a bit too strong for them and soon they were all asleep, and peace reigned. When we had reached the dull flat bit before Cologne one of the girls woke up, stretched herself, shook her companion violently and said, "Sadie, we've missed the Lorelei rocks" and they sure had.

Cologne was a bedlam of noise, bells, trams and revellers, and we were glad to catch a Belgian Sabena line plane back to Croydon next morning.

I handed over Coastal Command to Air Marshal Joubert de la Ferté, on the 1st of September, after my two years' tenure, which had marked another interesting period in my career. My only regret was that the spirit of co-operation which existed in those sailors and airmen of various ranks who worked together to meet the air needs of the Navy was not reflected in the attitude of those concerned at the Admiralty and Air Ministry. A little give and take on both sides might well have avoided the separation which came about soon after I left the Command when the Fleet Air Arm became an entirely naval affair.

CHAPTER XIV

THE IMPERIAL DEFENCE COLLEGE, SEPTEMBER 1936 TO DECEMBER 1938

soon after the First World War, a recommendation was made by the Committee of Imperial Defence for the establishment of a Combined Service Staff College to train senior officers of the fighting services. Like so many excellent ideas of a similar nature, the proposal met with opposition, particularly from one quarter, during its voyage for approval round the various Ministries, and it was shelved for the time being. This was in the days before it became the fashion to accept a proposal "in principle," which meant that the idea seemed good and was worthy of further consideration, but just at the moment the time was not ripe to carry it into effect.

However, with the strong backing of Sir Maurice Hankey, it was not long before the scheme was again considered by a reconstituted Chiefs-of-Staff Committee, and as a result the Imperial Defence College came into being at No. 9 Buckingham Gate.

The first course started in January 1927 with Admiral Sir Herbert Richmond as Commandant. The supervision of the College for professional purposes was vested in the Chiefs-of-Staff Committee. The Admiralty was responsible for the administration of the College, and its cost was provided in Navy estimates; grants-in-aid in an agreed proportion were contributed by the War Office and Air Ministry.

The staff consisted of a commandant of the equivalent rank of Rear- or Vice-Admiral, the appointment normally being for two years and filled in turn by each of the three services. The directing staff comprised a naval Captain, a Brigadier and a Group-Captain or Air Commodore. The course lasted for one year, and was attended by students nominated by their respective Dominions or Ministries. The capacity of the College in the small building at No. 9 was limited to a total of thirty-two, of which eighteen vacancies were available for the three fighting services (six for each) and the remainder divided between the Civil Service, the Dominions and the Indian Army.

The functions of the I.D.C. were defined as: "The training of a body of officers and civilian officers in the broadest aspects of Imperial Strategy." The outline of the syllabus was as follows:

(a) Lectures, discussions and conferences on the higher executive direction of the War, strategic and administrative.

(b) Study of the organization of the fighting services and of Civil Home Defence from the national and Imperial point of view, and of the influence of political considerations on the conduct of operations of war.

(c) Study of the economic, social, industrial and financial resources of the United Kingdom and British Commonwealth of Nations.

(d) Study of questions of foreign policy and of our relations with foreign powers.

(e) Visits to certain naval, military and air establishments, Port of London, railway and industrial centres.

In the summer of 1936 the time came to select an Air Officer as Commandant for the following two years, and much to my satisfaction the choice fell on me. I had, for some time, been thinking on the lines of a closer link-up and community of thought between the services, and this seemed an excellent opportunity to help things along in that direction.

In November of the previous year I had prepared a memorandum on "The Closer Co-operation of the Three Services," which I had sent to Lord Swinton, Secretary of State for Air at that time. In my paper I had pointed out that old prejudices still tended to form a barrier between the services in spite of such innovations as the Chiefs-of-Staff Committee, the Supply Committee of the C.I.D., Imperial Defence College, etc. etc.

I went on to suggest that much of the trouble might be due to the spirit engendered at an early age in each Service College, resulting in what one might call a parochial *esprit de corps*. It was true that the Imperial Defence College helped to broaden the outlook of the few senior officers who passed through it, but its scope was very limited. The result was that there still remained a good proportion of senior officers who reached flag, general or air rank, who had never had the opportunity of working with one of the other services, and who had not yet learnt to appreciate their collective responsibilities to the nation as senior members of the country's Defence Forces.

I pointed out that it seemed as if there were some commanders who were incapable of employing a force of another service allotted to them for operations without a desire to possess it and dress it in their own uniform. This attitude seemed to lead to suspicion, lack of confidence and reluctance to detach units for operations with another service.

I quoted some instances: a squadron of four flying-boats, despatched to Gibraltar in the Italian crisis of 1935, required a total of 15 officers and 150 other ranks to operate and administer it. No machinery existed to enable full use to be made of existing naval and military formations of all kinds already there. Fees were actually paid for the hire of Army motor transport, pending the arrival of R.A.F. vehicles. Naval aircraft carriers remained in reserve while the Air Ministry chartered improvised merchant ships to carry their squadrons overseas at a time of great tension. Finally I recommended that the Imperial Defence Committee should consider whether something could be done to improve matters. To all this I received a sympathetic reply, but it was to be left for a Second World War to bring about the desired whole-hearted co-operation which marks a new era in inter-service relations in combined operations against a common enemy. It remains to be seen whether the barriers that were removed during the war will remain permanently lowered between the Ministries in peace when they begin once again to compete with each other at Budget time.

During my first year, the directing staff consisted of Captain Pat Horan, R.N., Brigadier Alan Dawnay and Air Commodore Portal; in the second year, Captain Bill Tennant, R.N., Brigadier R. Dewing and Group-Captain Donald. In addition, we had on the staff an economic adviser, Mr. Fayle, who kept all of us *au fait* with this important aspect of war. The job of these officers was to produce the setting for each exercise, to arrange the mixed syndicates to work them out, and to comment on results. It was no easy task, since we were dealing with thirty-two picked senior officers and civilians who were already experts in their own spheres.

All possible wars in which we might conceivably become involved were considered and dealt with, mostly by conferences. Syndicates, allied or enemy, represented an imaginary Defence Committee, complete with Prime Minister, the three Chiefs-of-Staff and other Ministers. By this method we insured that political and economic considerations were not overlooked when deciding questions of strategy. The dictatorial attitude of Hitler and Mussolini in brushing aside the counsels of their respective military chiefs was usually well portrayed by a member of one or other of the enemy syndicates.

Towards the end of the year's course we discussed the higher direction of war and asked students for recommendations as to the lines on which the expansion policy of the Forces should be framed.

This gave an excellent opportunity for all to air their views and subject them to the spotlight of criticism by their colleagues. In the exercise which dealt with Higher Direction, the question invariably arose as to whether the Prime Minister and the Defence Minister should be one and the same, also as to whether the members of the Defence Committee, other than the Chiefs-of-Staff, should be chosen from those already with ministerial responsibilities or from a few entirely free from departmental duties. I do not recollect that we ever came to a unanimous decision on the point, so much depended on the personality and wishes, in this respect, of the Prime Minister concerned.

Personally I held certain views on subjects which were lower in the scale of importance. For instance I could never quite make out why the executive head of the Army should still be called the Chief of the Imperial General Staff (C.I.G.S.) when there was, in fact, no Imperial General Staff. Nor was it quite clear to me why the Secretary of State for War should be so called when his responsibilities were confined to those connected with one arm of the fighting services. Their *Lordships* of the Admiralty wrote to the *Members* of the Army or Air Council: rather a patronizing method of address.

To these apparent anomalies there seemed no answer except that they had long been so called, and that no occasion had arisen to change them. It seems to need a crisis to alter such things, as it does in the case of many a development, social or otherwise. Generally speaking, as a nation, we seem reluctant to discard outworn traditions and to change names which no longer define the nature of the post or function, yet it is almost as important as to scrap obsolete machinery, weapons or methods.

In reviewing the plans on which future expansion should take place, it seemed to me that in the Royal Marines we had a service which lent itself, more than any other, to development on the lines of the United States Marines, as the covering force or spearhead of attack in any amphibious operations.

I knew of the ponderous machinery involved in the despatch of Army formations, complete with large Headquarters Staffs, motor transport, etc. etc., and with their scale of equipment the same, whatever the nature of the operations in view and with all the publicity of calling up reserves, departing trains and touching farewells.

On so many occasions in peace time, during periods of tension, it would have been of the greatest advantage if there had been a

sufficient force of Marines to embark in naval ships direct from their port depots for passage to wherever trouble was brewing. They would have been used to ship life, could themselves handle boats and knew the signals and language of the service with which they worked. In fact they would have been a Commando Force, already trained.

In my search for machinery to bring this about I found no one who was really interested, though many thought it was a good idea.

Throughout the course many distinguished men in all walks of life came to lecture at No. 9 Buckingham Gate. It was my duty to invite them and arrange dates so that the subject of their talk coincided, as far as possible, with the nature of the exercise in progress. One or two of these lecturers confessed to me later that though they came regularly to the College they felt it was a very trying ordeal, for there was nearly always in the audience someone who knew as much about their subject as they did themselves. Though this was not strictly accurate in every case, yet there were few events or places about which one or other of the thirty-two students did not know quite a lot.

It will be remembered that King Edward VIII abdicated on December 10th, 1936, and that the coronation of King George VI took place on May 12th, 1937. At the coronation I was fortunate in being allotted a very good seat in the west corner of the gallery in the north transept of Westminster Abbey. From my position immediately behind the Dominion High Commissioners I had a most excellent view of this impressive ceremony. Like most of those who were privileged to attend, I reached my seat by 6.15 a.m., and as my full-dress uniform possessed no pockets I carried a small packet of sandwiches inside my full-dress hat. I had, at last, found a real use for that not very ornamental headgear. A kind lady who sat next to me occasionally fed me on chocolates, which sustained me to such good effect that at the end of the ceremony in the late afternoon I cheerfully walked back to my flat in the rain, leaving instructions for my driver to pick up the wettest senior officer he could find walking along and take him home. The car organization had suffered from a temporary breakdown, principally owing to the enormous crowds near the Abbey.

The coronation celebrations continued with a Court Ball at Buckingham Palace on the 14th May, a very brilliant function, and a Naval Review on the 20th May. My wife and I attended the ball and saw the Review under the most advantageous conditions from the P. & O. *Strathmore*, which had been specially chartered

for the guests of the Government. On the 28th May, Stanley Baldwin resigned the Premiership and Neville Chamberlain took his place for what was to prove one of the most difficult periods in the history of the Empire.

During the summer term, the I.D.C. programme included a week's visit to France and Belgium for a tour of the battlefields. Officers who had taken part in the various battles described the action from some vantage point on the spot. These trips, done in a comfortable motor-coach, were very popular and gave us all a useful break in the middle of a strenuous term. I felt rather like a schoolmaster taking his boys out for a holiday, but on both occasions I enjoyed it as much as they did. Both in 1937 and 1938, in our passage through northern France, I was struck by the apparent slump in the industrial towns. Most of the factory chimneys had no smoke coming from them, and one could see batches of depressed-looking men loafing about with nothing to do. To the casual observer France did not look very healthy just then, except for the farms, which still appeared as prosperous as ever.

In the autumn of 1937 Field-Marshal von Blomberg sent me an invitation to see the German combined manœuvres, which were to take place in Mecklenburg towards the end of September. On the 22nd September I left Hendon in a Bombay troop-carrier and arrived at Warnemünde the same afternoon. Our party consisted of Field-Marshal Sir Cyril Deverell, his Military Assistant Colonel Geoffrey Neville, Brigadier Pakenham-Walsh, Group-Captain Don, the Air Attaché, and Wing-Commander Moore. General Sir Edmond Ironside arrived later.

We stayed at the Hubner Hotel and were entertained on the first night at an official dinner of welcome by General Reichenau on behalf of the Field-Marshal, who did not appear till next day. There were two other delegations, the Italians under Marshal Badoglio and the Hungarians under General Roder. Reichenau spoke English well and seemed to have a sense of humour. I saw quite a lot of this German during the next few days, and he seemed to me very different from the bull-necked, arrogant Prussian Army officer of a generation ago. His age was fifty-three and on his return from manœuvres in the evening he would change into shorts and play high-class tennis. During our visits to various units in the field I noticed that he talked to officers and men as if they were human beings. He had no opinion of the Italians at all, and said so in English late one night when there was an Italian sitting at the table immediately behind him. I remarked that he was

being overheard, but he smiled and said that the Fascist didn't understand English. From German sources the announcement was made in 1942 that Reichenau had died of heart trouble on his way back from the Eastern Front.

Badoglio seemed a pleasant old Italian soldier, so very different from some of his Fascist colleagues. Of the Hungarians I saw very little; they looked rather unprepossessing and stolid individuals.

Our host, Field-Marshal Blomberg, was a fine-looking soldier who did everything possible to make our visit interesting and enjoyable. A polite Saxon, Colonel Doerstling, of the German Air Force, was attached to me during my visit and was most forthcoming in answering questions. He did not give me the impression of being a very ardent Nazi.

For two days during the preliminary phase of the operations we were taken on a personally conducted tour, during which we had time to take note of the very high proportion of anti-tank and light anti-aircraft guns with every field unit. We saw also many batteries of 88 mm. guns, of which there were four to a battery with a duplicate set of range finders and predictors, also attached searchlights and sound locators.

On the third day we went to sea in Hitler's yacht, *Aviso Grille*, embarking at a small port near Stralsund. On board we met Admiral Raeder, the Chief of the Naval Staff. We watched a submarine attack on a convoy of merchant ships escorted by some destroyers and the two cruisers *Königsberg* and *Leipzig*. The small submarines attacked at close range and surfaced very close to the ships. I remarked on this to Admiral Raeder, who replied that they were trained to take risks even in peace-time.

Later we proceeded to Swinemünde Harbour, which seemed well protected by shore batteries. Going up harbour we passed an artificial fire with fire brigade complete in gas masks fighting the pink flames.

On landing we drove to Garz aerodrome and emplaned in a Junkers 52 for Warnemünde. It was dark with low visibility but we got there without any difficulty. On thanking the pilot I learnt from him that he had to go on to Berlin that night. I did not envy him the task, but it showed that these German communication pilots were very weatherproof.

On Sunday, the final day of the manoeuvres, a grand finale was staged for the benefit of Hitler and Mussolini. Whilst we were waiting for them, Udet, the Chief of the technical department, arrived in a funny-looking army co-operation aircraft called a

"Stork." It floated around at about 35 miles an hour and landed almost stationary on the side of a hill.

Hitler arrived on the scene with Mussolini about noon, and shortly afterwards the British Delegation was introduced to Hitler. As I shook hands with this strange fanatical-looking man, I wondered how on earth he had managed to hypnotize a nation of more than 80 million people. Göring one could understand; he was fat and cheerful. He spoke some English and I remarked on the very low flying of some of his bombing formations which had passed over shortly before. "Yes," he said, "they must attack very high or very low." I saw only Heinkel 111 and Dornier 17, but there were plenty of them.

The final scene was a mass attack by at least 800 tanks supported by infantry, and the noise was terrific. They took no notice of crops or fences but just went straight across country. I supposed that the farmers got some compensation, or perhaps it was their contribution to the proceedings. Later I was surprised to find seven or eight of the light tanks ditched in quite a small stream which was apparently just the wrong width for them.

The battle was actually rather artificial and the tactics did not greatly impress our military experts, but it certainly was a fine spectacle. The whole country, as far as the eye could see, seemed full of moving tanks, advancing infantry and guns of all description. At some stage during the manoeuvres about 150 German parachutists were employed to seize a strategic point, but we didn't see them. Soon afterwards Hitler departed with Mussolini and I believe they went to watch an anti-aircraft shoot at a drogue target at Wustrov, on the Baltic coast, but we were not invited to that.

The drive back to Warnemünde was, perhaps, one of the most interesting experiences of the visit. We saw numbers of various units reassembling after the "Cease-fire," which was given by three aeroplanes flying at some distance apart, emitting smoke trails. I was particularly interested in the motor-cycle and side-car units, which consisted of two riflemen on the cycle and one in the side-car, or, alternatively, one on the cycle and one in the side-car with a machine-gun.

On the following morning we departed from Warnemünde by car early and visited a Labour Camp near Doberan. The Commandant explained the system of the camp, and the policy aimed at by Hitler, the hardening of youth under strict discipline and irrespective of class, before Army service. About 150 boys of seventeen and eighteen years of age were housed at the camp

where they worked seven hours a day, either on some public work or on the farms, the owners of which made a contribution. The sleeping quarters appeared rather primitive and would certainly not have been passed by our own medical authorities. A guard of honour presented spades as we left.

On reaching the outskirts of Berlin we found the road already lined for some miles by black-uniformed S.S. men on either side, waiting for the official entry of Mussolini, who was expected shortly. At our hotel, the Bristol, an invitation was waiting for us from the German Government to attend a "speech-making" on the following evening by Hitler and Mussolini in the Maifeld, followed by a torchlight tattoo in the stadium. We also found a message from the Foreign Office which displayed a characteristic regard for our feelings, for it said that we were not to accept the invitation to the speech-making as we might find it embarrassing to listen to abuse of democracy.

On the evening in question, therefore, we went straight to the stadium where we sat in a room behind Hitler's box listening to the Maifeld speeches being blared at us through a very loud speaker. We duly heard the abuse of democracy in Mussolini's speech, in which he referred to the "52 criminal nations headed by England." The Foreign Office had saved us from much embarrassment and we could laugh in private.

After the speeches we went into the box overlooking the darkened stadium, and presently a searchlight was switched on the flags of the German Reich, of the Nazi Party, and of Italy, which were flown from the masts at the top of the stadium. At the foot of the flagstaffs were six German bluejackets in white, who sounded a fine fanfare on trumpets. Later, a searchlight shone on to the top of an enormous flight of steps at the other end of the stadium. Almost immediately the two small figures of Hitler and Mussolini appeared at the top of the steps and proceeded down them—a truly Wellsian scene. The two dictators crossed the stadium with the spotlight still on them and came up into our, or rather Hitler's box, at the front of which they stood for the rest of the evening.

It then began to rain and by the end of the Tattoo it was coming down in buckets. When we got to the entrance, it was evident that there had been a complete breakdown of traffic arrangements. I managed to get away eventually and arrived back at the Bristol to find that some of our party had already returned under the guidance of a humorous German, General Koch, who

had commandeered an Italian Fascist's car with a large Fascist flag on the front of it. Geoffrey Neville told me that it had caused him no embarrassment to travel in the Fascist's car even with its flag, and that, as far as he knew, the rightful occupant must be still at the stadium with his black shirt getting wetter every moment.

Next day a march past was held for Mussolini's benefit and there the British Delegation had an excellent stand just behind Hitler. Neville, who spoke excellent German, gave me a running commentary on the uncomplimentary remarks which the German Generals just behind us were making about Mussolini and his attendants. The latter looked like little black monkeys jumping around to photograph the Duce from a position low down which made him look bigger in the photographs than he really was. We saw what seemed to be a never-ending procession of men, guns, armoured cars and tanks. They took over two hours to pass, and all infantry units went past doing the goosestep. The Navy did it rather half-heartedly. It was a most interesting spectacle, which reminded me of "Metropolis," a film of the future when all men are robots.

The following day we flew back to Hendon, and so ended my second visit to Germany within two years. In 1936 the anæsthetic of international friendship and goodwill—in 1937 a display of strength and mass organization to impress and to emphasize the futility of interference with Hitler's adventures in Europe. Perhaps, at that time, it was intended as much for the benefit of Mussolini as our own, for it was to be only six months before Hitler marched into Austria and annexed it as a state or province of the Third Reich.

As I had learnt by experience that it was best to house oneself as close to a London job as possible, my wife and I took a flat off Palace Street, immediately behind No. 9 Buckingham Gate. For recreation I went to hunt at Grantham on Saturdays during the winter, and to the Solent for sailing in the summer. In July I met our son Dick on his arrival on leave from Singapore in an Empire flying-boat, which had taken only seven days on the trip. At the same time I saw the American "Clipper" in Southampton Water; she had just arrived on the Atlantic Air Service.

As Commandant of the I.D.C., I was occasionally called upon to give outside lectures. For two years running I gave one at the Royal Naval War College on "British Strategy." In my search for

inspiration I came across the writings of General Sun, "The Master," who lived in China in the fifth century B.C. In his "Attack by Stratagem" he suggests that there are five occasions when victory can be foretold: "When the general knows the time to fight and when not to fight; or understands when to employ large or small numbers; when government and people are of one mind; when the State is prepared, and chooses the enemy's unguarded moment for attack; when the general possesses ability and is not interfered with by his prince." I was particularly taken with the last condition.

General Sun also recommended that though it was an excellent idea to endeavour to surround the enemy, it was as well to remember one thing—leave him a hole by which to escape, otherwise he will fight like the devil. One could almost imagine that General Sun had in mind an air striking force of bombers ready to convert such a retreat into a rout and thus to achieve victory at minimum cost.

Bacon, also, made a valuable contribution to the subject: "Walled towns, stored arsenals and armouries, goodly races of horse, chariots of war, elephants, ordnance, artillery, and the like:—All this is but a sheep in a lion's skin except the breed and disposition of the people be stout and warlike."

My feeling was that, though the breed and disposition of our people was stout and could rapidly become warlike, it would save much inconvenience to all concerned if our potential enemies realized the fact. A united and firm front by all members of the British Commonwealth, speaking with one voice, would help them to do so. Half-hearted protests from the League of Nations, pacifist campaigns and Peace Pledge Unions would not.

I visualized that we should probably find ourselves involved in war when all measures to prevent it had failed, with great reluctance and probably after having withheld certain, too obvious, preparations for fear of aggravating the crisis; in fact, unprepared in comparison to the enemy. Our machinery to wage war, like a cold engine, would take time to warm up. It would not be completely effective from the start; certain legislation was necessary. I suggested that these factors must not be ignored because they would seriously affect our strategy. Plans which relied for their effectiveness on immediate decision and rapid execution might fail if the time-table forecast was too ambitious.

Our history has shown that a reverse, series of reverses, or some crisis had usually occurred in the early stages of war.

Disasters seemed to act as stimulants, and having survived them we would win in the end, as the only war for which the British Empire seemed particularly suited was a long one. The problem was to survive the first lightning blows of an enemy fully prepared and with a new and powerful air weapon at his disposal.

At the Royal United Service Institutes I lectured on "Training for Higher Command." After reviewing the service career of Marshal Foch, who was appointed Allied Commander-in-Chief in France at the age of sixty-seven, and of Admiral Jellicoe, who was Commander-in-Chief Grand Fleet at the age of fifty-five, I dealt with the contrast between the conduct of sea battle by a naval C.-in-C. and of land or air operations by an army or air commander.

In the case of the sea battle, it is the C.-in-C. himself who must make the immediate decision as to deployment and his subsequent conduct of operations cannot wait for staff conferences. He is in the line of battle—that is his tradition—on his success or failure in that position history will judge him as a Higher Commander. It is Nelson, not his First Sea Lord, Admiral Barham, who is on the column in Trafalgar Square.

An army or air commander had not yet got quite the same problem, where speed of decision is so vital and where the means are at his disposal immediately to alter his tactics, as in the case of a fleet action. Both army and air commanders must still rely on their trained staff for sorting out the information on which they must act and for the subsequent preparation of the orders in accordance with their decisions.

I gave details of the training at the I.D.C. and hoped that by the time he had finished the course at No. 9, the potential Higher Commander would have learnt the reason for much that was previously inexplicable to him. He would know something of the problem of Cabinet Ministers, of the political considerations which were involved in Imperial Defence and which affected our rearmament and Home Defence efforts. I hoped that he would have formed his own opinion on the probable reaction of each independent Dominion in any emergency which threatened the security of the Empire and would be fully aware of the limitations of a democratic British Commonwealth of Nations in regard to war preparation in comparison with a totalitarian state. He would be able to take all these factors into consideration and to make the necessary allowances for them in the time-table of any strategical plan or appreciation. Above all, I felt sure that he would be fully

convinced that no one service could, by itself, win a war, and that in a continental war on the grand scale it would not only be the three fighting services which would be involved, but the whole nation. It was essential, therefore, that he should be acquainted with any civil organization designed to meet such a contingency.

I concluded by saying that in spite of all this I could not guarantee that what had been produced would necessarily be a future higher commander, or merely an extremely intelligent and highly trained staff officer. It would remain a gamble till he was tested in some future war.

In February 1938 we all visited the Bristol aircraft works and saw the welcome sight of Blenheims coming off the production lines, and also Pegasus, Mercury and Perseus engines from the engineering shops. At Vickers we had seen the Wellesleys completing and the first of the Wellingtons. Expansion in its early phase was in full swing and none too soon, judging by the look of the international situation.

By this time Hitler had assumed direct command of all armed forces. Blomberg and Fritsch had resigned, Göring was promoted to Field-Marshal and Keitel appointed as Co-ordinating Minister under Hitler. As already recorded, the occupation of Austria took place in March (1938).

My second son, Jim, after being accepted for a short-service commission in the R.A.F., went off to Egypt for his training. This brought our family representation in the R.A.F. up to three, a figure which my youngest son considered to be quite sufficient, for he subsequently joined the Gunners and thus placed himself in a satisfactory position for "shooting his own line," free from any patronizing control by his light blue brothers.

His Majesty visited the College in March and attended a lecture given by Sir Thomas Inskip on "Imperial Strategy," and soon afterwards the Duke of Gloucester came to listen to Field-Marshal Sir Philip Chetwode, who spoke on the problems of India. He used emphatic language in recommending what should be done to the Frontier Tribesmen when they gave trouble. He waved the map pointer so violently that the noses of H.R.H. and myself, sitting in the front row, nearly suffered a similar fate to the one suggested for the tribesmen.

In May my wife and I attended an Air League dinner, at which we saw, for the first time, the new Air Defence Cadets, about a dozen of whom were paraded for the inspection of those present. It was the beginning of a splendid organization which,

under Air Commodore Chamier, was to prove of the utmost value to the R.A.F. eighteen months later. My wife was largely responsible for the formation of No. 47 Squadron in our home town of Grantham, early the following year, during my absence abroad in Australia.

Amongst other visits of interest arranged for the I.D.C., we went to the Norfolk coast and saw some of the new A.A. guns firing at drogue targets towed by aircraft up to 10,000 feet. I was not very impressed by the accuracy of the heavy guns, but the shooting of the Bofors against low-flying towed targets seemed quite promising.

In August the Sudeten problem became acute. Germany was having full-scale manoeuvres with all reserves called up, which placed Hitler in a very favourable position to play Power Politics. Lord Runciman was in Czecho-Slovakia adjudicating between Czechs and Sudetens.

As it was by then our summer holiday period at the I.D.C., I slipped off to France with my daughter and spent a most delightful week in a seaside villa near St. Raphael, which my friend, Reggie Leslie, and his wife had taken. We motored from Boulogne, by way of Compiègne, Soissons, Rheims, Châlons-sur-Saône, Troyes, Dijon and Beaune, where we stayed the night. Thence to Bourg, Grenoble, by the Col de la Croix Haute to Sisteron, Digne, Castellane, Grasse and Cannes. From Beaune to St. Raphael was rather too far for comfort in one day and I registered that if I did the trip again I would stop the night *en route* somewhere. It was perfect weather, the sea was warm and we shot rock-fish with a harpoon arquebus invented by a Frenchman. We played tennis, danced, laughed a lot and forgot all about Hitler and Mussolini, like all the French who were holidaying on the Côte d'Azur in full strength. It seemed to me that the south of France was far more pleasant in summer than in winter, but then I like the sun.

We got back before the end of August and soon after the College reassembled to work out its last and final war exercise of the Course—War with Germany. The Directing Staff had, some time before, arranged the setting and had selected the Sudeten problem as the cause of the war. This added considerably to the interest of our task, and though some of the students were called away to their war stations at the height of the crisis they came back whenever they could to see the progress of the paper war. Of course we could not foresee, in our setting, the virtual

hamstringing of Czecho-Slovakia by the unopposed German occupation of Sudeten territory, which came to pass as a result of that very inglorious period of history. We gave the Czechs credit for an effective resistance lasting from three to six weeks, and we looked to the Russians and the French to give them some assistance, at least by air. Our paper war lasted till after the crisis had passed, but it was already sufficiently complicated without bringing in Japan and subsequently the U.S.A.

It came out clearly that we knew very little about the actual strength of Japan and it remained a problem as to what proportion of naval strength should be kept in European waters to deal with Germany, and what could be spared for the Far East. The result was not very encouraging.

It was natural that the actual events of that depressing September were followed, stage by stage, by all at the College, and when, finally, Neville Chamberlain returned from Munich on the 30th with the "No-more-war" declaration, there were few that did not feel thoroughly ashamed at what appeared to be a betrayal of Czecho-Slovakia.

It was true that as a result of Munich we were to give ourselves another eleven months in which to accelerate our preparations, and that the Prime Minister, knowing the full facts of our unpreparedness and of the feeling in the country, was right in gaining that breathing-space, but it was the apparent jubilation at the result and the Thanksgiving Services in the Churches which troubled me. Hitler might well have been misled into thinking that in no circumstances would we go to war, whatever he did on the Continent of Europe. I felt that our prayers to the Almighty should have been for guidance in our dilemma rather than for peace, the attainment of which was always possible provided we were prepared to continue our policy of appeasing the arch aggressor.

Mr. Winston Churchill was to have come and lectured to us in October, but I received a letter from him to the effect that he was so distressed by the change in the situation that he hadn't the heart to address himself to the task to which he had been invited.

The crisis passed, and at the conclusion of the Course in December I had been over two years at the I.D.C. It was now the turn of the Navy to provide the Commandant, and before Christmas I had turned over to Vice-Admiral Binney. It had been a most interesting and enjoyable period in which I hope the students had learnt as much as their Commandant.

CHAPTER XV

A MISSION TO AUSTRALIA AND NEW ZEALAND, 1939

BEFORE leaving the Imperial Defence College I had been told by the Air Ministry that I should be required to take over Training Command in July (1939). In the meantime I was to accompany Sir Hardman Lever and Sir Donald Banks on a Mission to Australia and New Zealand to investigate the possibilities of aircraft production of service types.

Visits to various aircraft factories before my departure showed me the strides that had been made in production to meet the expansion scheme. Some motor-car firms had already switched over to aircraft and big new assembly sheds had been built. At Bristol I saw the "mock-up" of the Beaufighter with its four 20-mm. cannons and also the prototype Beaufort torpedo bomber with its Bristol Taurus engines. This was the type suggested for Australian construction.

With Sir Donald and Lady Banks, I left London on January 20th and reached Toulon, via Marseilles, the following day. We sailed that afternoon for Naples, where we berthed close to the *Empress of Britain* and the Italian Atlantic liner *Rex*, a fine-looking ship. The harbour was very congested and I remember thinking what a wonderful bombing target it would be. I joined a small party and visited Pompeii, which I had not seen before. It seemed in a wonderful state of preservation and some fresh workings had recently been completed. Vesuvius looked particularly beautiful with its white plume in the morning sun.

At Aden I found Air Commodore Ronald Reid commanding the Forces ashore, Army and Air Force. Both he and the Chief Commissioner, Sir Bernard Reilly, were not very satisfied with the defences in the event of war with Italy. This was somewhat natural, as they consisted of a squadron of antiquated Vincents (a single-engined, two-seater bomber), two old 3-inch A.A. guns, four 6-inch coastal guns and one battalion of Arab Levies, 400 strong. Aden certainly looked as if it might prove to be a hostage to fortune, if left in that defenceless state.

At Colombo, Donald Banks and I motored out to the civil aerodrome and found a small landing-space being gradually

extended by the felling of more trees. Press reporters were anxious to know whether the main air route to Australia would be likely to pass through Colombo. We thought that, in the near future, it would not, because of the very long sea crossing to Western Australia. After a very nice bathe on the beach near Mount Lavinia, and an excellent dinner at the Galleface Hotel, we returned on board and started our nine-day voyage to Fremantle.

On this trip it was the turn of the *Orontes* to drop mails, newspapers and a cask of provisions for the nine Europeans who manned the cable and wireless station at the Cocos-Keeling Islands. We stopped off Direction Island and pushed the barrels over the side for the little sailing boats to pick up.

A small pamphlet, obtainable on board, described these islands, which were first reported by Keeling of the East India Company in 1609. For four generations a Ross had governed the small native population of about 1,000. The original John Ross came there in 1827 with his English bride, and from that time onwards the natives were able to export sufficient copra to pay for necessary imports, but in 1901 a cyclone practically cleared the island of coconut trees and did great damage to the native buildings.

Ross's rule appears to be a benevolent autocracy, as he allows no intruders, and any native who leaves the island may not return. The medium of exchange is token money on a rupee basis in the form of bones of different sizes and shapes.

A large lagoon giving sheltered water could be made suitable for flying-boats, and it was subsequently used by an American P.B.Y. boat flying to Africa from Australia via these islands. The main trouble with these lagoons is usually the existence of coral pinnacles sticking up to within a few feet of the surface. The best method of dealing with them is by dynamite, but it naturally takes some time to locate them.

It was on these islands that the *Emden* was beached after her action with the Australian cruiser *Sydney* in the First World War. Some of the *Emden's* crew, who were ashore demolishing the cable station at the time the *Sydney* appeared, eventually reached Jeddah in the Red Sea in the island schooner *Ayesha*.

We arrived at Fremantle on the 14th February, and I decided to fly across to Adelaide and rejoin the *Orontes* there, for the final voyage to Melbourne. A short motor drive past some very nice seaside houses and a well-laid park with a wonderful variety of trees brought me to Perth. A Royal Australian Air Force

officer took me out to the newly built air station at Bullsbrook, where I found two squadrons forming with Avro Ansons. The buildings were on a very elaborate scale, with a fine officers' mess, and the whole organization was modelled on R.A.F. lines.

At Pinjarra, outside Perth, I was shown over the Fairbridge Farm school, established for the training of boys and girls, aged between ten and sixteen, who had come out from Great Britain under the auspices of this excellent scheme of immigration. It is financed partly by voluntary contributions and partly by the Federal Government. The children are housed in cottages with a matron in charge of each. I saw some of these homes, which seemed to provide all that was necessary for the happiness and welfare of these young people who were to make Australia their future country. Besides the ordinary school education, the boys were being trained in farm work and the girls in domestic duties. I spoke to one little batch of youngsters, and found they came from a Durham mining village and had only recently arrived. I had heard something of this organization and I was glad to have seen it, but what a pity there were not five thousand instead of a few hundred youngsters.

The Chairman of the Great Boulder Mine Company, whom I met in Perth, invited me to see the Company's gold-mine at Kalgoorlie; so I took the train and wandered the 350 miles over the hills, amongst the trees and across the plain, till we reached our destination the following morning. The manager of the mine, an ex-soldier who had lost an eye at Anzac, met me, and we drove down the Golden Mile past the various mining companies to the Great Boulder. Having donned overalls and crash-hats, we clattered down in the lift to the 2,000-foot level and walked along some of the spacious main galleries to the smaller ones beyond, where the tough Aussie miners were drilling and blasting in the gold-bearing strata. The miners get good wages when the mines are working, and their recreation has been well catered for in the shape of clubs, bowling greens, trotting race tracks and an enormous swimming stadium, the water for which comes in 3-foot pipes from a distance of over 375 miles on its way to the gold-mines.

On the surface I saw the crushers at work, and had the various processes described to me. I wondered what Patrick Hannan would have thought of these modern developments, for it was he who first discovered gold at Kalgoorlie in 1893. On the centenary of Western Australia in 1929 a memorial fountain was erected in

192

his honour in the centre of this straggling township, which has passed through many vicissitudes in the past fifty years. The proprietress of the Palace Hotel told me something of these ups and downs, when we drank a glass of wine together to the memory of her late husband, the original proprietor.

I left next day in a Douglas air-liner of Australian National Airways which called at Kalgoorlie on its passage from Perth to Adelaide. An attractive little air hostess took my ticket and asked me if I had ever travelled by air before. Receiving a non-committal reply, she took it for granted that I hadn't, and on the strength of it I got my share of attention and of barley sugar with the other fourteen passengers—all men.

For some way the air route follows the railway across the Nullabor Plain. After refuelling at Forrest, we cut across the north end of the Great Australian Bight and, having refuelled again at Ceduna, reached Adelaide in the evening after a most comfortable thousand-mile trip.

I stayed at the Richmond Hotel, and before joining the *Orontes* once more I had time to look round this extremely well-laid-out city, the capital of South Australia. The Premier, Mr. Playford, was particularly proud of the Parliament buildings, the parks and general amenities. He also took Sir Donald Banks and myself to see Holden's motor-body works where the stripped chassis of trucks and motor-cars arrived in crates from Great Britain and the United States, mostly the latter. They were being fitted with springs, tyres, wings and bodies made in Australia. The works seemed to be running on very up-to-date lines, complete with conveyors, spray painting, etc. etc. This was my first introduction to industrial Australia, and I was quite impressed.

We berthed at Melbourne on February 19th, and I was surprised and pleased to see my son Dick on the quay to meet me. I had sent him a radio from the ship after leaving Colombo to say that if he could get some leave from Singapore he might come to Australia at my expense. He had accepted the invitation with alacrity and had arrived that afternoon by Quantas Air Line.

I liked Melbourne from the moment I arrived. It is a dignified city, plenty of space, roads with avenues of trees, beautiful botanical gardens, a fine Government House and an imposing war memorial shrine. The Menzies Hotel at which we stayed was most comfortable, though Melbourne trams do not let one

of a reservoir. Sydney's airport was at Mascot, where elementary flying training was in progress on a not very extensive airfield. With various small aircraft scattered all over it the air-liner pilot had some difficulty in finding a clear landing run. All very casual I thought, and I said so when the next opportunity offered because, though Australians themselves may not worry too much about accidents, their Press and Politicians shout to the high heavens for somebody to be hung if an air-liner accident does happen, and at Mascot the stage was set for such an incident.

It is a pity that so many city airports are situated so that the drive-in lies through the slums. I have read of the thrill of entering Sydney harbour through the famous Heads, but from the airfield one arrived by a very smelly route past tanneries and glue factories. Perhaps it is all different now, because Sydney believes in progress.

The Australia Hotel, where I stayed, was very modern. One could look at various types of motor-cars in the shop windows of the main reception hall. In one's bedroom there was the choice of three programmes on the radio which was fitted in each room, and the whole installation was the work of Australia's (own) Amalgamated Wireless Corporation.

Sydney seemed a great contrast to Melbourne, and proud of the fact. Everyone appeared to be in a hurry, whether they were drivers of motor-cars or mere pedestrians rushing to catch a tram or a ferry. The harbour certainly justified its reputation for size and beauty, and the high-level bridge built by Dorman Long a few years ago seemed to add to the impression of progress so typical of Sydney and indeed of New South Wales as a whole.

In order to get a proper bird's-eye view of the city and harbour, my son Dick and I hired a taxi-plane from Mascot and flew around the outskirts. It was well worth the money, as by no other means can one get so quickly the answer to the question: Why are those who live in or near it so proud and fond of Sydney? It is a fine modern city situated on one of the best harbours in the world, where the ships of all nations come and go; it has unrivalled facilities for yachting in sheltered waters, exhilarating surf bathing from beaches within easy reach of city or suburbs, and there are beautiful gardens, parks and a first-class zoo. Add to these, golf- and race-courses in abundance, and one concludes that nowhere in the world are the normal requirements of a modern generation so completely and conveniently met.

The work of the Mission took us to Newcastle, a three-hour

train journey north of Sydney, where Mr. Essington Lewis, Chairman of Broken Hill Proprietary, showed us round the very fine modern steelworks which were producing the highest-grade steel in considerable quantities. These works, of recent construction, had an advantage over most British undertakings of a similar nature from the fact that they were of modern design from the start, and had not grown up stage by stage.

The iron ore was shipped round the coast from Port Pirie in South Australia, and met the coal from the easily worked mines at Newcastle, the ships being able to berth alongside the works. We walked through what seemed to be miles of shops in these steelworks and saw railway rolling-stock, tyres, axles, aircraft bombs, shells, wire of every description, and fair-sized guns under construction. I can imagine the expansion which has since taken place at this enterprising industrial centre.

I was fortunate in being offered an aeroplane to fly me back to Sydney by the Newcastle Light Aeroplane Club. It was a beautiful trip down the coast, over Port McQuarie and the mouth of the Hawkesbury River, and I could picture the delights of a camping expedition on the wooded slopes of that fine river.

Our next trip was to Port Kembla, south of Sydney, which we reached after an easy motor drive through pleasant scenery. As at Newcastle we stayed in complete luxury at the Director's cottage, so called. Next day we walked round Metal Manufactures Ltd., Commonwealth Rolling Mills, Australian Iron and Steel and Lysaght's. The chairman of most of these was either Sir Colin Fraser or Mr. Essington Lewis.

At this deep-water port, where ships can berth alongside recently constructed quays, coal was very near the surface, so that miners worked under the best conditions. Incidentally, they were within a stone's throw of a fine bathing-beach which would have gladdened the hearts of some of our miners from the grim villages of Wales and Northern England.

I next visited Cockatoo Island, Sydney, to see merchant ships and small naval vessels under construction, which gave me some idea of the capacity of this shipyard for future expansion.

On our return to Melbourne, the Air Ministry experts, Mr. Boddis and Mr. Howarth, had completed their investigations, and we began the work of preparing our report. The gist of it was to recommend to the Australian Government the immediate setting up of an organization for the construction of the Bristol Beaufort torpedo aircraft. The scheme was based on the lines on

which production was running at home, that is to say with the construction of components farmed out to subsidiary firms, and with a main final assembly shop situated on an aerodrome. The problem was, as usual, the supply of jigs and tools, which would have to come, in the first instance, from the Bristol Company. We were unanimous in agreeing that the industrial capacity of Australia was quite up to the task proposed, and that the railway workshops would be capable of playing a big part in the manufacture of components.

During the fortnight of our meetings and discussions with the Australian authorities, I had the opportunity of paying various visits in the neighbourhood of Melbourne. I saw the Australian Air Force Stations at Point Cook and Laverton, where training and the formation of new squadrons were in full swing.

I paid a short visit to Tasmania, a very easy trip of some three and a half hours by air to Hobart. The Prime Minister, Mr. Lyons, travelled in the same plane as far as Launceston. I thought he was looking very ill, and he actually died the next month.

At Hobart I stayed at Hadley's Hotel. My dinner mates were an ex-R.A.F. officer, now agent for Leyland's, and an American fauna expert charged with arranging the Australian exhibit of wild life at the New York Fair. The latter was very interesting on the subject of Australian marsupials, and we talked till late of kangaroos and platypus.

Next day I was shown round the Electrolytic Zinc Company's works just outside Hobart. The hydro-electric power for the process is available at low cost from the Great Lake Supply in the middle of the island. It is a most interesting process in which the zinc deposits itself on the plates of an accumulator and is merely chipped off complete in a solid slab. On Hobart quays there were warehouses full of apples and alongside them ships loading for England, for the main trade from this island is still apples and fruit.

Flying over Tasmania gave me no close-up view of the country, so I decided to go back by train and steamer. The funny little engine puffed its way up the gradients and in and around the orchards, but somewhere short of Launceston it gave up the ghost. No one was in the least perturbed, the guard jumped out, hooked his portable telephone apparatus on to the nearest line and rang up for a spare engine. It arrived in about an hour or so, and,

in the meantime, the passengers had been wandering in the woods picking wild flowers.

At Launceston the steamer had waited for us, and we had a wonderful trip down the Tamar River between wooded slopes and negotiating sharp bends in our 5,000 ton ship the *Taroona*, which was beautifully handled by its experienced captain. The Bass Straits were kind that night; they can be very rough.

En route to Sydney we visited Canberra, motoring there 60 miles from Goulburn on the main line. The scenery was much the same as usual, but near Canberra I noticed the deeper green of fir trees and cyprus which had been planted by the Forestry Commission.

Canberra itself was a pleasant sight with its white buildings and red roofs, but it was far from complete and very empty. We were shown the Federal Government buildings and the Governor-General's residence, which was being renovated and enlarged in readiness for occupation by the Duke and Duchess of Kent, who were to have arrived that autumn. This federal capital may be a very sound idea, but it seemed to be taking some time to come into its own. It is so far away from where things are happening.

Before leaving Australia for New Zealand we had the privilege of lunching with the Commonwealth Cabinet. We had already seen quite a lot of Mr. Street, Minister of Defence, Sir Earl Page (Deputy Prime Minister) and Mr. Casey (Finance). I sat next to Billy Hughes, the grand old man of Australian politics, who kept me thrilled with his reminiscences over a period of many years.

Our Air Mission left Sydney for New Zealand in the *Awatea*. This fine 15,000-ton miniature *Queen Mary* does the Trans-Tasman crossing frequently but apparently gets the same send-off from the quayside on each occasion. I was much interested and, incidentally, amused at this cheerful ceremony. First of all, the loud-speaker broadcasting system throughout the ship announced that: "This is the *Awatea* sailing for Wellington at such and such a time." It is just as well to know that one is in the right ship and going to the destination required. Then bright jazz music blared out whilst thousands of coloured streamers, bought on the quayside, were thrown between ship and shore. I found myself holding the ship-end of about a dozen of these streamers with various people ashore, most of whom I had never seen before, holding the other ends.

In the final scene "Auld Lang Syne" was broadcast, and as the ship left the quayside the streamers broke one by one. In my

naval days this sort of party would have brightened many a departure from Portsmouth dockyard, usually a grim business, but I admit I cannot picture the dockyard matey picking up the debris afterwards.

We had a comfortable trip, and on the morning of the third day I got up early to see the beautiful view as the ship entered the Cook Strait, which separates the North and South Island. It was a pity that the legendary dolphin, "Pelorus Jack," was no longer there to escort us into Wellington as he had done regularly over a period of years to so many ships. He would have completed the thrill of seeing New Zealand for the first time.

It did not take very long for the experts of the Mission to discover that the manufacturing capacity of the Dominion was not sufficient to justify our recommending the construction of large metal aircraft. On the other hand it was clear that aviation had already been developed to a considerable extent. The young men of New Zealand made good airmen, and many, trained in the Dominion, had joined the Royal Air Force. Many more were under training in order to implement the promise of the Government, made to us at the time of the Munich crisis, to supply 1,000 pilots per annum in case of war. This latter figure was subsequently amended to 1,200 aircrew.

The scope for civil air transport was considerable, and the services which were running were well patronized, particularly those between the North and South Islands. The aircraft in use were either de Havillands or small Lockheeds. As in the case of most countries, the airfields which had been originally selected and prepared were far too restricted in size for high-wing-loading modern air-liners. No sooner had one extension been completed than the next had to be started. Some of the airfields in New Zealand had limitations in this respect, due to hills or mountains close by. Particularly was this the case at Rongotai, the terminal airport of Wellington, where the approach to the airfield from one direction was over the peak of an adjacent hill; the top was being cut off to improve matters.

Our Air Mission recommended the establishment of a factory where small elementary training aircraft of wooden construction could be built. I think the Ministers to whom we expressed this recommendation were somewhat disappointed at such a disclosure of their limitations in industrial capacity, but in the years of peace to come, when the question of balancing their export of primary products with imports of industrial machinery arises.

they may be only too thankful that such limitations exist. In 1937 their exports totalled over sixty-six millions, resulting mostly from wool, butter, frozen lamb or mutton and cheese. Great Britain took a considerable proportion of this and, in return, was able to meet New Zealand's requirements in manufactured goods of all sorts. My reflection is that war, and the threat of war before it, have forced most Dominions, and with these I include India, to meet their own requirements and even to export the surplus of their industrial output to such an extent that the balance of trade throughout the British Commonwealth of Nations will be difficult to readjust in peace. New Zealand may well prove to be the one exception and thus be able to maintain that very close link with Great Britain which at present exists and which, in no small measure, is due to her splendid contribution to the successful North African campaign, and to her steady output of fine airmen, both to her own Air Force and to the R.A.F.

A welcome break at Easter enabled the members of the Mission to see something of the North Island, though time did not permit of us going south to Christchurch and Dunedin which I should like to have visited. As a guest of the Government we motored to Hamilton, stopping to see the famous Waitomo caves *en route*. These are remarkable for their stalactite and stalagmite formations, and for one particular cave through which an underground river flows. On the ceiling of this cave were millions of glowworms shining like stars, each with its fine thread 3 or 4 inches long suspended below like a fishing-line. The thread is covered with a sticky substance to which any small insect, including mosquitoes, stick when attracted towards the glowworm's light. During our passage in a small boat down the underground river, our guide warned us to be quiet, for the glowworm puts out its light if disturbed by noise. I had never given the glowworm credit for such ingenuity and sagacity as an insect catcher.

At Hamilton we saw a butter factory with an output of twelve tons a day, and later the same day we arrived at Rotorua where I stayed at a fishing-lodge "Hamurama," twelve miles outside the town. After lunch we were shown round the Thermal regions by Rangī, the Maori woman guide, quite a remarkable character and very picturesque in her native kit of red silk, straw skirt, and a coloured bandeau round her head with feather complete.

Sulphurous steam was exuding from the rotten crusted ground at various points, a cold spring in one place, a boiling one in another, with pools of boiling mud here and there. A Maori village sits on the top of all this, and the steam coming out of the ground is used to cook with. If one vent dries up, another opens somewhere else, possibly right under one of the huts. In this case the latter is merely moved somewhere else, unless, of course, it has been blown sky high, which is quite a usual occurrence.

Geysers gush up at intervals here and there; one of them was called the "Prince of Wales." A golf-links provides unusual hazards in the shape of boiling mud pools, in which it is definitely a question of lost ball if it goes in.

In the evening we attended a Maori concert, and I heard, for the first time, the famous canoe song to the accompaniment of the Poi, a sort of castanette consisting of two woolly balls on a string which the Maori girls manipulate in beautiful soft rhythm as they sing their traditional song, sitting down as if in a canoe. Centuries before, the Maoris' ancestors were Polynesian migrants who found their way to New Zealand in their big canoes.

I flew away from Rotorua to Auckland off a very restricted airfield with a one-way take-off, and that was over the cemetery. Our Vega Gull did not have much to spare, and to crash in a cemetery on the edge of what must obviously be the entrance to the nether regions held nō great attraction for me.

Auckland, with its lovely harbour, was delightful, and like Sydney and Hobart must be a yachtsman's paradise. The Pan-American Pacific Clipper had arrived from San Francisco via Honolulu and one or two South Sea Islands. I saw the construction in progress of two large aerodromes in readiness for the Wellington bombers, which had been ordered for the New Zealand Air Force.

Next day Donald Banks and I flew on to New Plymouth down the west coast. Mount Egmont, with its white cap cover, stood out clearly when we were yet nearly a hundred miles away. The airfield at New Plymouth was the finest I saw in the North Island and obviously capable of considerable further extension. The officials who met us and gave us lunch seemed to think that New Plymouth stood out as the future main terminal airport of New Zealand for aeroplanes arriving from Australia.

A beautiful flight from New Plymouth along the coast past Wanganui brought us back to Wellington and here I said good-bye to the members of the Air Mission and joined the United Kingdom

delegation to the Pacific Defence Conference, which started its deliberations on April 14th.

My immediate colleagues were Sir Harry Batterbee, the High Commissioner, Admiral Sir Ragnar Colvin, and Major-General Pat Mackesy. The New Zealand members included the Prime Minister, Mr. Savage, Finance Minister Nash, Deputy Prime Minister Fraser, Defence Minister Jones and Minister of Industries and Commerce Sullivan.

The Conference was for the purpose of reviewing the situation in the event of war in the Far East, particularly in regard to the defence of New Zealand. A sub-committee, of which I was a member, dealt with the Trans-Pacific Air Route.

As in many other isolated territories, the inclination was to concentrate defensive measures in the territory itself rather than rely mainly on strongly defended strategical points elsewhere, the possession of which by the enemy would be a necessary prerequisite to any ventures further afield.

We were able to satisfy them that the defence of Singapore was the key to their problem and that, as long as that fortress held, neither Australia nor New Zealand would be in very serious danger of actual invasion. The less-important questions of garrisoning certain islands were considered, and arrangements agreed.

Our sub-committee on the Trans-Pacific Air Route reviewed a situation in which, at that time, Pan-American Airways had access to New Zealand, whilst as yet there was no reciprocal arrangement for a British service through to San Francisco, via Honolulu. The general idea was that the American Government would be reluctant to grant the use of Honolulu to any but purely American air-line companies, possibly on the grounds that if they did so to us the Japanese would claim the same privilege. We decided that the first thing to do was to place ourselves in a position to operate such a service and then to ask for the necessary facilities.

The alternative routes to Honolulu through the Pacific islands were discussed at length, and it emerged that there would be little difficulty in establishing suitable airfields, or finding sheltered water for aeroplanes or flying-boats respectively on various islands owned or occupied as mandatory territory by either the United Kingdom, Australia or New Zealand.

Pan-American was probably more anxious to open the route to Australia, via Noumea in New Caledonia, than to stick to

its original agreement to make Auckland the terminal airport. Australia offered prospects of more traffic than did New Zealand. I felt that development was bound to follow that line.

We covered a lot of ground and learnt a good deal of Pacific geography before we finally completed our deliberations and sailed away on the 27th April back to Sydney in the good ship *Awatea*. The return voyage was completed at an average speed of twenty-one knots in spite of a heavy swell in the Tasman Sea. The flying-boat service between Auckland and Australia, shortly to be started, promised an even faster and more comfortable passage in something under twelve hours.

Our arrival in harbour in the early morning, through the Sydney Heads, came up to my expectation, and the handling of the *Awatea* by Captain Davy in berthing his ship alongside Darling quay without the use of any tugs was a treat to watch.

After booking my passage by Qantas Airways for the following day to Singapore, I called on the Governor-General, Lord Gowrie, to say good-bye. He had just been capsized in one of the sailing races, and I waited whilst he changed his clothes before giving him my account of the Pacific Conference. Mr. Lyons, the Prime Minister, had died two or three weeks before, and Australians were indulging in one of their periodical political upheavals, in which the Press participated whole-heartedly. The sound cool judgment of a highly respected and very human Governor-General at such a time must have been of great value to the Commonwealth, and it seemed to me fortunate that they had, in Lord Gowrie, someone who could offer the best advice and be relied upon to deal with any emergency.

In the early morning of May 2nd I left Rose Bay, Sydney, in the Qantas Empire flying-boat "Cameronian" for Singapore. We flew by way of Brisbane and Gladstone, past some of the coral islands on the inner fringe of the Barrier Reef, to Townsville, our first night stop.

Next day we flew to Darwin across the Cape York Peninsula and Gulf of Carpentaria, with refuelling stops at Karumba at the mouth of the Norman River, and the coral island of Groote Eylandt with its large lagoon. The final stage was over Arnhem Land and the Buffalo country.

Darwin, as I saw it, did not do credit to Australia from the point of view of its being the future entry airport into the Commonwealth. The town seemed ramshackle and primitive, and at that time certainly not well defended. The dawn take-off the following

morning, just when the Southern Cross was fading, is still fresh in my memory. The rose pink in the east, soon to be followed by more gorgeous colours, gold, light eggshell blue, then deep azure, as the sun came up. We flew across the Timor Sea to Koepang on the Dutch part of this island, of which the south-eastern end is Portuguese, then to Bima and thence to Sourabaya, passing over the volcano crater at Bali by special request.

Sourabaya is a fine harbour, and the Javanese town gave me the impression of being well developed by the Dutch. I had heard that the local zoo had a specimen of a Komodo dragon, a species of very large lizard, coming from an island we had passed over that morning. I went to locate this animal, which seemed about 12 feet long and quite a good imitation of a dragon. On the way out of this zoo I saw a most peculiar-looking small elephant, which seemed to me to have ginger hair. We regarded each other with curiosity for a short time and then, without warning, it lifted its trunk from a slimy pond and soused me from head to foot. That elephant must have had a sense of humour and I certainly needed all of mine. However, half an hour or so under the fan in my room at the Oranje hotel soon dried my suit.

We reached Singapore the next day with one stop at Batavia. Here I broke my journey home to stay for two days with Air Vice-Marshal John Babington, the A.O.C. I saw the R.A.F. base aerodrome at Seletar with its twenty-four obsolescent Vildebeeste torpedo bombers, and the flying-boat base with six Sunderlands. Afterwards I was shown round the naval base, on which over fourteen millions had already been spent. I saw also some of the coast defences, including a naval 15-inch gun. A million pounds would have bought a lot of fighters.

I left by Imperial Airways flying-boat for England on the afternoon of May 7th, and had one of the stickiest air trips I have ever experienced to Penang. Soon after leaving Singapore we ran into heavy rainstorms and low clouds, which persisted throughout the flight. The mist from the forests came up to tree-top height, to add to the difficulties of the pilot; he somehow managed to get us to Penang in the dark and landed without hitting anything on the water.

Next day we had a long trip to Calcutta, with stops at Bangkok, Rangoon and Akyab. It was my first visit to Calcutta, and I must admit that I was not impressed. Everything seemed so dirty and haphazard in comparison to the cleanliness of Singapore and

Sourabaya. Perhaps it was the route we took from the flying-boat base on the Hooghli to the Great Eastern Hotel, and vice versa the following morning, which revealed a squalor which was not so noticeable elsewhere in the city.

The trip to Karachi, right across India, was done the following day with stops to refuel at Allahabad, Gwalior reservoir and Raj Sammand lake in Rajputana. This was a very interesting flight, at not too great an altitude, so that one could see something of the country below.

We changed into R.M.A. "Castor" at Karachi, for the rather dull flight to Basra, where we alighted on the river alongside the fine new Iraqi terminal airport with hotel complete. It was a great change from the last time I had been there eleven years before; aircraft of various lines were coming and going at all hours.

It was interesting to fly over Iraq once more, and next morning, whilst *en route* across the desert, I had a glimpse of the new R.A.F. base near Habbaniyah Lake, which was now a large Flying Training School complete inside its own defended perimeter. We reached Alexandria in the afternoon and left again next morning for Marseilles via Mirabella in Crete, Athens, Brindisi and Lake Bracciano.

On the sixth day after leaving Singapore I arrived at Southampton, having thoroughly enjoyed the air trip home in the Empire flying-boat. During my four months' travels I had seen something of our great Empire Commonwealth, and what I had seen convinced me that it was a very healthy and thriving concern, far more so than any of our potential enemies could possibly realize from any superficial outward and visible signs.

TRAINING COMMAND IN WAR

I HAVE always felt something of a thrill on coming home to this country even after only a few months' trip abroad, and particularly so on this occasion, for the month was May and most of my family was there on the quayside to greet me. My two airman sons had flown down from their air station and joined my wife and Reginald Leslie. They formed a very cheerful reception-party as I stepped ashore at Southampton from the Imperial Airways launch.

The next six weeks before taking over my new command were very fully occupied. I saw the Air Minister, Sir Kingsley Wood, and the Chief of the Air Staff, Sir Cyril Newall, to report the result of the Pacific Defence Conference. I learnt something of the progress of the expansion scheme, which appeared to be going as fast as peace-time tempo permitted. I was surprised that there were more bombers being turned out than fighters. It always seemed to me that we, as a nation that was invariably caught unprepared, would need fighters at the outset to stave off defeat whilst we built up our offensive. Moreover, it was three years since I had seen the first Spitfire and yet there seemed to be very few of them about.

I called on Lord Chatfield, Minister for Co-ordination of Defence, Sir Thomas Inskip, Secretary of State for the Dominions, and Captain Balfour, Under-Secretary for Air. The general opinion seemed to be that war with Germany was inevitable and it was only a question of when it would start.

On May 20th Empire Air Day displays were held at most big air stations throughout the country. The original single R.A.F. Pageant at Hendon had been replaced by this new arrangement which gave opportunity to thousands more people throughout the country to come to see not only a flying show but also something of the mysteries of the machines themselves and of the equipment inside them. As in the case of Hendon the proceeds went to the R.A.F. Benevolent Fund.

I took my family to Wittering near Stamford and saw a very well-arranged display both in the air and on the ground. Our son Dick was doing an aerobatic turn in an American Harvard train-

ing monoplane, which added to our personal interest in the proceedings.

The R.A.F. lost a staunch supporter, and many of us a firm friend, when Sir Philip Sassoon died on June 1st. He had been almost a permanent institution as Under-Secretary at the Air Ministry for ten or twelve years, though recently he had become First Commissioner of Works. He had always been particularly interested in the welfare of both officers and men of the R.A.F. and had travelled by air to every oversea air command, and to some of them twice, to see how they were all getting on. He had a remarkable memory for names and faces, and his annual garden party at Trent Park for R.A.F. officers and their wives was a most popular event. It gave opportunity for meeting many old friends in an ideal setting on the beautiful lawns between the house and the lakes. Officers serving at headquarters and at air stations nearby were honorary members of his well-kept nine-hole golf-course. A few years ago if one played at the week-ends it was quite on the cards that the caddie might say: "Look out, sir, don't drive yet; that's the Prince of Wales"; or "There goes Douglas Fairbanks." At the second hole an emperor penguin watched with interest the short approach shot over the lake, and on many occasions I have wished that one of the fancy wildfowl could have rescued my golf-ball from a watery grave; all they did was to make weird noises as if in derision.

At the beginning of June the annual R.A.F. Yacht Club Regatta was held at Calshot and I went down to take part. Unlike the occasion twenty-five years before, no yachtsman asked me whether the coming war would interfere with their racing; they were only too certain it would. I remember that Arthur Coningham won one of the races.

In the R.A.F., yachting or rather boat sailing had been popular wherever it was possible. At Singapore the airmen had a thriving club, and at Aden, Karachi and Felixstowe officers and men participated in the local sailing races. I doubt whether it was realized at the time how important it would be in this war for air-crew to know something about handling boats of any sort in a wind or tideway. Training in "ditching drill" and the Air Sea Rescue Service organization had to wait till after the war started, when lame ducks from Bomber Command flying home from Germany began to ditch in the North Sea, and the fighter "boys," brought down in the Channel, sat in their rubber dinghies till

rescued by high-speed launch or flying-boat. I hope that boat sailing and boat-work in general will always be encouraged in the R.A.F.

I had, by now, three flying members in the family including myself, and strong reasons were put forward to me in a well-argued letter from Dick as to why I should once more provide a light aeroplane for family use. After taking into consideration questions of delivery and the all-important one of finance, both as to initial cost and subsequent maintenance, our choice was a Fairey-built "Topsy" monoplane. It was a small two-seater (side by side) with a 60 h.p. Walter Mikron engine (Czech built). For the next three months before the war started Dick used this little machine from his station at Manston as an ordinary means of transport. It was easy to maintain, did 20 air miles to the gallon and had a cruising speed of 95 m.p.h. It could be flown comfortably at 50 m.p.h. and was thus most suitable for making a passage in low visibility.

On July 1st (1939) I became Air Officer Commanding-in-Chief of R.A.F. Training Command with my headquarters at Buntingsdale Hall, close to Market Drayton in Shropshire. At that time the command was responsible for both flying and ground training of every description, and expansion in all its activities was taking place fairly rapidly. Four groups commanded by Air Vice-Marshals or Air Commodores came under my jurisdiction and, fortunately for me, enabled a considerable degree of decentralization to be effected. No. 21 Group at Cranwell was commanded by A.V.-M. Sutton and No. 23 Group by A.V.-M. Pattinson; both these had Service Flying Training Schools as their main responsibility. No. 24 Group commanded by A.V.-M. Maltby dealt with all ground training stations, and No. 25, Air Commodore de Crespigny, with armament establishment and bombing and gunnery schools. Group responsibility was principally confined to training, whereas such questions as administration, opening of new stations and supply of aircraft were centralized at my headquarters. I was pleased to find that Malcolm Henderson, who had served with me eight years before, was my Air Officer in charge of Administration (A.O.A.). Of all senior posts in a rapidly expanding command this one was probably the most exacting; it was usually a question of making bricks without straw, or in more exact terms trying to train airmen without the suitable accommodation or adequate facilities for the purpose which the A.O.A. was expected to provide. I knew that Malcolm Henderson would preserve his sense

of humour and perspective, and during the following six months it was to be tried to the utmost.

In the busy two months before war was actually declared there was little time for anything but hard work, trying to keep pace with the training requirements of recruits who came along in ever-increasing numbers. Visits of inspection took me to a variety of air stations ranging from Invergordon in the north to near Weymouth in the south.

Amidst all these hurried preparations to meet the German threat now more obvious than ever, two peace-time functions stand out rather vividly in my memory. On July 18th I took my two R.A.F. sons to the Levée at St. James's Palace. We were all in full dress and made our bow to His Majesty one after the other. I should not be human if I did not confess that it was a proud occasion for me. The other was the Cadet Camp of the air section of some public school O.T.C.s at Norton Priory near Selsea Bill. This was the beautiful home of Norman Holden and his wife, and the cadets were in camp alongside the private landing-ground on which light aeroplanes of all descriptions were coming and going. My Topsy monoplane arrived with Dick and a friend on board; he had come to see his youngest brother, one of the cadets, and take him for a flight. The Holdens kept open house, and their hospitality was much appreciated by the many R.A.F. visitors to the camp.

On the Monday morning I flew back to my headquarters, passing down the length of the Solent *en route*. It was the first day of Cowes Regatta, the last one before the war, and all the racing craft were already sailing over to the start. It was a lovely sight and one which many looked forward to seeing again some day, myself amongst them.

On the 24th August the German-Russian non-aggression pact was signed by Ribbentrop and Molotoff. It was done right under the noses of the British and French Military Missions which were in Moscow at the time. Historians will record the rapid sequence of events which followed, and I shall confine myself to giving an impression of the immediate effects on Training Command after the Emergency Powers Bill had been passed in the House of Commons. All officers were recalled from leave, the Observer Corps was called out, the camouflage of aerodromes was begun (incidentally the spraying of the grass and runways was particularly effective), war markings were painted on aircraft and reduced lighting restrictions came into force. The tempo of our

preparations increased, it became possible to get things done in days instead of weeks.

In our large and comfortable ante-room at Buntingsdale, staff officers of headquarters assembled to hear the B.B.C. news bulletins which told us, on September 1st, that Germany had invaded Poland and that general mobilization had been ordered in Great Britain and France. On September 3rd we heard the voice of our Prime Minister, Neville Chamberlain, announce that no German reply having been received to our ultimatum which had been issued at 9 a.m., and expired at 11 a.m., we were now in a state of war with Germany. So for the second time we were in for a war which I recorded in my diary would be a long and bloody one.

Next day I started on a round of visits to some of my air stations to see that they were lacking nothing to continue full speed ahead with their training. I had recently been allotted a useful and comfortable Q.6 communication aircraft. It had twin engines, carried a radio operator and was piloted by my personal pilot, Flt.-Lieut. Bowen. First we flew over to Aldergrove near Belfast, passing over the submarine *Thetis en route*. She was off the North Wales coast, close inshore, with the lifting vessels trying to raise her. This naval pre-war disaster was now no longer headline news.

Aldergrove Air Station was crowded with aircraft and personnel. No. 502 General Reconnaissance Squadron of Coastal Command was already operating on anti-submarine reconnaissance, though some of the Ansons had neither wireless nor bomb racks. A large number of reservists had just reported, and five or six hundred of them had to be accommodated in the aircraft hangars. There was a certain amount of apprehension as to possible trouble from the southern Irish across the border, but except for minor incidents nothing materialized.

My next visit that afternoon was to West Freugh near Stranraer, and here I had the opportunity of seeing how this bombing and gunnery school was planning to compete with the increased number of aircrews arriving for training. This school was one of a dozen or so similar ones situated round the coast. Each of them had one or more target rafts moored off the coast, close to the aerodrome, at which small practice smoke bombs were dropped from varying heights by the bomb aimers under training. There were also ground attack targets on the beach and areas over the sea in which air gunners and fighter pilots could practice various methods of attack and fire live ammunition at sleeve or flag

targets towed behind another aircraft. I have already referred to the difficulty we had in establishing these stations in peace-time because of their particular nature, but now it was war and we did not take long to open up new ones whenever a suitable locality was discovered.

Late that evening I flew in beautiful weather across the Lowlands of Scotland and landed at Drem near North Berwick, one of our Service Flying Training Schools. The system of training pilots at that time was briefly as follows: After selection as aircrew pupils had a few weeks training at an I.T.W. (Initial Training Wing), of which there were several, mostly at some seaside resort where accommodation was available and there were beaches and promenades suitable for parades and physical drill. Pupils then went to the Elementary Flying Schools where they did *ab initio* flying on light aeroplanes, usually Tiger Moths. These schools were civilian and run under contract at so much a head. They were most satisfactory and saved enlisted manpower considerably, many of the staff, even including technical personnel, being young women. After six to eight weeks the pupil passed on to a S.F.T.S. (Service Flying Training School), where more advanced flying was taught by service instructors on aircraft such as Harvards, Airspeed Oxfords or Avro Ansons. After twelve to sixteen weeks at an S.F.T.S. the pilot, now either a Pilot Officer or Sergeant Pilot, passed on to some form of Operational Training. Special O.T.U.s (Operational Training Units) were later established for both bombers and fighters.

Drem was just one of some twenty to thirty S.F.T.S. in Scotland and England, with perhaps up to a hundred or more pupils under instruction at the same time. There seemed to be no particular problem except the usual one of keeping the aircraft serviceable under high-pressure training conditions.

Next day I flew on to Montrose, another S.F.T.S., and from there to Evanton near Invergordon, the most northerly of our bombing and gunnery schools. Thence I flew to Lossiemouth (S.F.T.S.), which of all our air stations seemed to have the most suitable flying weather all the year round. I was back to my headquarters in Shropshire in time for an hour or two in the office.

That was a typical two days' air tour of which I did many in that fine autumn of 1939. It was always interesting to note the difference between various station commanders; some had all sorts of knotty problems to be solved and were always asking for something, others said nothing and just got on with their jobs as best

they could with what they'd got. As always, no praise can be too high for the maintenance and ground-crew personnel who now had to work on aircraft in the open at dispersal points, sometimes in the dark, instead of inside well-lit hangars.

I remember being rather shocked at the indifferent physique of some of the recruits, particularly the "militiamen"; their teeth seemed to be the worst feature. I was inspecting some of them in a hut one morning and glancing at one man's kit, laid out alongside his bed, I noticed the absence of a toothbrush and asked him about it. The poor fellow stammered, and after an embarrassing pause blurted out, "N-N-No t-t-teeth, sir." Of course it was the complete answer, the toothbrush would have been redundant till the service dentist had finished the dentures.

As may be imagined, one of our main problems was to improve accommodation not only for housing and feeding but for the technical training of ground crews. My A.O.A., Malcolm Henderson, had a brain-wave and suggested we might try Blackpool. After some promising investigations by my staff I went to see for myself what could be done. The Mayor and Town Clerk were most helpful and saw no reason why we should not take over a seven-storey garage, the municipal bus depôt and various other premises suitable for installing work benches and technical training equipment. Then the question of housing and feeding the men arose, and I was told that no doubt the Blackpool landladies would oblige. The Town Clerk then asked me: "How many do you think you will send?" To which I replied rather diffidently, "Oh, about 4,000." He smiled and said, "Oh, is that all? It's nothing; in the summer months we usually get 120,000 visitors coming every Friday."

So it was all arranged, and before a fortnight had elapsed this technical training school had begun to function with its 4,000 airmen under training. Each landlady took some 20 to 25 men in her lodging-house and woe betide any of them that were late back at night or slow in the morning. The Town Clerk was right in his parting words: "By the way, I don't think you will need any service police."

Technical training of all sorts was, of course, in full swing at the original permanent stations such as Halton and Cranwell. Two more big centres were being completed at St. Athan and Cosford, both of which were extremely well designed and equipped for the purpose. They had fine workshops, large hangars, an amenity centre which consisted of a large gymnasium, swimming-

bath, church and cinema. These permanent stations and others such as Hullavington, South Cerney, etc., which opened shortly before or just after the war started, were a credit to the Air Ministry Works and Buildings Department and particularly to the Director, Colonel Turner. No service could wish for more comfortable accommodation for both officers and men.

In the middle of October Air Chief Marshal Sir Robert Brooke-Popham came to stay at my headquarters. He had been permitted to resign the governorship of Kenya and had returned to his old service. He was about to leave for Canada to confer with the Canadian authorities on the new Empire Air Training Scheme. Those who were responsible for proposing this organization which materialized so satisfactorily, and I believe that S. M. Bruce, Kingsley Wood, Balfour and Portal were involved, deserve all praise, not to mention the Canadian Government who so efficiently implemented it. Three years later I was to visit Canada and see the result, so it will suffice at this stage to say that the main idea was to shift the flying training away from air-congested Britain to Canada, where scope and facilities would be ideal for the purpose. Brooke-Popham came to gain first-hand information on the S.F.T.S. and what would be entailed in establishing them in Canada. My S.A.S.O. (Senior Air Staff Officer), Air Commodore McKean, was soon to leave the command in connection with this new enterprise.

The Central Flying School which for some years had been at Wittering was now back at Upavon, its original home, and on the occasion of a visit there in September I found, in addition to our own flying instructors under training, the usual collection of foreigners doing the instructors' course. Amongst them a Belgian, who did not seem at all perturbed at the idea that, a fortnight before, a Belgian fighter had shot down a Whitley bomber which had wandered over Belgian territory. We are certainly a broad-minded nation in such matters. Upavon, so large and spacious for the aircraft of 1912, was proving all too small for some of the new types with long take-off runs.

In November a visit to Boscombe Down, now the home of all experimental aircraft, gave me the opportunity to see the various new types and amongst them the Beaufighter, with four 20-mm. cannons firing forward. The four-engined bombers such as Halifax, Stirling and Lancaster had not yet made their appearance and of the night bombers the Wellington was the latest. I looked in vain for a modern British transport plane, but the latest was the

Bombay troop-carrier, which had already been in service some time.

In January 1940 headquarters of Training Command moved from Buntingsdale Hall at Market Drayton to Shinfield, outside Reading, where a special war-time hutted camp had been built for its reception. A very cold spell with frost and snow tested the amenities of our new quarters, but on the whole they were quite satisfactory. This severe winter made conditions very difficult at some of the hutted camps and interfered with training more than might be imagined. We almost had to evacuate one camp of 4,000 airmen because everything froze, including the drains, but luckily the thaw came just in time. Aircraft parked out at dispersal points had to have snow and frost cleared off their wings before they were serviceable for flying. Engines had to have special heating arrangements to facilitate starting and airfields had to have snow cleared from runways. Such handicaps slowed up the training and made it necessary in many cases to extend the periods allotted for completion of a programme.

In the spring of 1940 training stations continued to grow in numbers and variety to such an extent that it was decided to split the Command into two—Flying Training and Technical Training. This new organization came into being about April and both commands had their headquarters in Reading.

It was about this time that the C.A.S. gave me news of my selection as A.O.C.-in-C. Middle East, for which I should be required to leave early in May. At that time there seemed no immediate prospect of Italy entering the war, and I remember being rather sad at the prospect of leaving such a very interesting training command for one that was seemingly in a backwater. However, as so often turns out to be the case, I need not have worried about that.

CHAPTER XVII

MIDDLE EAST, 1940. MUSSOLINI BACKS HITLER

MAY 1ST 1940 was not a good day to choose for a visit to Air Ministry in search of modern aircraft for my new air command in the Middle East. The "Phoney-War" period in the West was ending—our Norwegian enterprise was not going well and the decision had just been made to evacuate central and southern Norway. It was to be the first of our evacuations and we had not yet got hardened to such set-backs. The gloom was intense, no one could be persuaded to take much interest in Middle East. After all, there was no reason to suppose that, for the present, Mussolini would do otherwise than remain an interested onlooker waiting for some really serious British and French disaster sufficient to give him an opportunity of achieving a great deal at little cost. Of course, he would need a few thousand casualties, just sufficient to justify his claim to an ample share of the pickings.

However, all that sort of thing seemed a long way off at the moment and I had to be content with the information that there was one Hurricane in Egypt under trial with special tropical fittings to make it suitable for work in the desert. If it was successful more might be sent out, but that depended on developments in the vital theatre. News, of which I was already aware, that the Turks had some Hurricanes and that the Rumanians and Greeks had received some of the latest pattern Blenheim IVs was no great consolation to me. I never did quite understand our peculiar generosity in this respect; modern aircraft may be useful political weapons but they are better in the hands of those who can use and maintain them properly.

On the following day, the 2nd May, I left Hendon for Le Bourget in a Lockheed 12 with my Personal Assistant (P.A.), Sir Arthur Curtis. He was an old friend who had served in the 11th Hussars and subsequently as an observer in the R.F.C. After the last war he had been with Earl Jellicoe in New Zealand and Lord Stonehaven in Australia. It was a pleasure to have such a seasoned companion on this new adventure which was to become so very hectic within a few weeks.

Paris looked quite lovely in the spring sunshine, and as we had

time to spare before catching the night train to Marseilles we drove out to Versailles in a taxi. It was hard to imagine there was a war going on somewhere to the north-east, and on the way back we passed Auteuil, where the race-meeting had just finished and all the smart cars were coming away. Paris was very peaceful, no one could have thought that within six weeks the Germans would be there.

The P. & O. *Strathmore* took us in comfort through a very quiet Mediterranean to Port Said where we arrived on the 9th May, and on the following day Germany invaded Holland, Belgium and Luxemburg. I knew then that whatever happened I would be unlikely to get any air reinforcements for the time being.

I officially took over command of R.A.F., Middle East, from Air Chief Marshal Sir William Mitchell on the 13th. All R.A.F. units in the following areas came within the command: Egypt, Sudan, Palestine and Transjordan, East Africa, Aden and Somaliland, Iraq and adjacent territories, Cyprus, Mediterranean Sea, Red Sea and Persian Gulf.

The primary rôle of these forces was clearly laid down as the defence of Egypt and the Suez Canal as well as the maintenance of communications through the Red Sea. My instructions also added that "this did not, however, preclude the possibility of air forces from the command being employed in the execution of such other plans as might be approved by the Chiefs-of-Staff from time to time." I was to be responsible, in conjunction with the Naval C.s-in-C. Mediterranean and East Indies and the C.-in-C. Middle East (General Wavell), as might be appropriate, for the preparation of plans for the employment of my air units.

From Intelligence reports an estimate of the Italian Air Force (I.A.F.) in Libya showed a figure of at least 200 bombers and 200 fighters, in addition to various obsolete types. These figures could, of course, be rapidly increased by reinforcement by air from the Italian mainland. My own force in Egypt, and available from Palestine, amounted to some 40 Gladiator fighters, 70 Blenheim bombers, 24 Bombay and Valencia bomber transports, 24 Lysanders and 10 Sunderland flying-boats. In the case of Gladiators, Blenheims and Lysanders there was a reserve of approximately 100 per cent. In the Sudan, Kenya and Aden a total of 85 Wellesleys and Blenheims were opposed in Italian East Africa (I.E.A.) by some 110 Italian bombers and 60 fighters.

The Gladiator fighter biplane with its four 0.303 machine-guns and speed of about 230 m.p.h. was evenly matched with the

Italian C.R.42. The Italian S.79 bomber was better than the Blenheim I for endurance and bomb-load. The older-type single-engined Wellesleys were quite outclassed in performance by the S.79. Lysanders were slow Army Co-operation aircraft of little tactical value. Bombays were useful large bomber transport aircraft which could be used for night bombing in emergency. Valencias were bulbous old biplanes for transport work. Twelve aircraft, plus six in immediate reserve, comprised the squadron establishment.

From a comparison of these forces it seemed to me that if Italy declared war and made use of her numerical superiority to attack our bases in Egypt, our air strength, particularly in modern fighters, would be inadequate to deal with the situation. In a signal to the C.A.S. reporting that I had taken over command I drew attention to our weakness in modern fighters and long-range bombers.

The numerical superiority of the Italians in both theatres (Libya and I.E.A.) was pronounced, but on the other hand my visits to some of our squadrons soon after I arrived showed me that whatever we may have lacked in quantity might well be made good by the quality of our personnel. I found seasoned and experienced air- and ground-crews, they and the men who manned the repair depots, stores and ammunition units knew their jobs thoroughly. The training and experience gained in peace-time in Egypt, Sudan, Iraq, India and Singapore was about to pay a very full dividend.

The day after my arrival I flew to Alexandria to meet Admiral Sir Andrew Cunningham, C.-in-C. of the Mediterranean Fleet. I had not previously served with him during my naval career but I knew of his record as a fearless and enterprising naval commander. A conference took place on board his flagship the same afternoon, attended by General Weygand from Syria and the three C.s-in-C. We discussed Balkan, Turk and Greek affairs as a preliminary to meeting the Turks at a conference the following week.

This took place at Beirut on May 20th, at a time when the Germans were overrunning France. With such a background for our discussions it was not surprising that the Turkish Marshal Chakmak was not very convinced of the ability of either France or ourselves to support Turkey in this, that or the other contingency. All the various plans hitherto conceived had been on a basis of a neutral Italy. What the Marshal wanted to know was

what we were going to do about it if Italy was hostile. Would we immediately launch an air offensive against the Dodecanese? I took the line that it would be impossible to promise anything definite in the early stages of a war with Italy.

It was difficult for the French to convince the Marshal as to the support, principally land forces, which would be forthcoming in support of the Turks. Their Air Force in Syria was very weak, a General to command the expected air reinforcements had arrived but not his aircraft or personnel.

The Turk is a realist, there was nothing very much in the way of air support that either the French or ourselves could immediately give him beyond the Hurricanes we had originally supplied at the expense of Middle East. As a result of the conference I formed the opinion that any further discussions with the Turks as to their active participation in any eventuality in which they, themselves, were not attacked would be purely academic. The most we could expect was the preparation of airfields in Anatolia to enable our air forces to be operated if and when the occasion arose. Meanwhile, in France, Belgium and Holland things were going from bad to worse, and at the beginning of June, Mussolini was still hovering on the brink waiting to take the final and disastrous plunge.

Our Ambassador, Sir Miles Lampson, accompanied me to an audience with King Farouk who talked with evident knowledge on air matters. In spite of the obvious weakness of our forces in Egypt and of the gloomy picture in Europe, I found the attitude of the Egyptians in all matters connected with our preparations for the defence of their country entirely correct. They helped to organize a useful air observer system, they placed no obstacle in our way in the construction of new aerodromes or the acquisition of land for repair and maintenance units. The two existing Egyptian Gladiator fighter squadrons, trained by British instructors, were to be made available for the defence of Cairo and Suez; they both came under the orders of the R.A.F. Fighter Wing-Commander. Another of their squadrons was to operate under the orders of the Canal Area Commander in anti-submarine patrols and reconnaissance in the Gulf of Suez. These duties they did in fact carry out quite conscientiously after June 12th when Egypt broke off diplomatic relations with Italy, only two days after Mussolini's declaration of war against Britain and France.

In all our negotiations with the Egyptians I found our large and staunch ambassador a tower of strength. He seemed at his

best when things were looking really black. At times the Germans may have looked like winning the war but that was no reason why H.E. should not attend Gezira races to see his horse run in the 2.30.

During that first week of June 1940 with France practically out of the war and the Dunkirk evacuation completed, it was obviously only a question of days, if not hours, before Italy struck. It seemed clear to me that the I.A.F. must be our immediate objective wherever they could be reached and, if possible, before they had taken the precaution of dispersing their aircraft or supply dumps. The destruction of the dumps in I.E.A. was particularly important; though they could fly S.79 bombers from Libya to Eritrea as reinforcements, they could not hope to replenish their fuel and ammunition supplies whilst the blockade was complete by sea and land.

My dispositions to carry this plan into effect were briefly as follows:

In the Western Desert, with headquarters near Mersa Matruh, Air Commodore Collishaw had three Blenheim squadrons, Nos. 113, 45 and 211, one Gladiator squadron, No. 33, and one of Lysanders, No. 208.

In the Sudan, Group-Captain Macdonald commanding No. 254 Wing with headquarters at Erkoweit had three squadrons of Wellesleys, Nos. 47, 223 and 14, a flight of Vincents and a flight of Gladiators from No. 112 Squadron.

In Kenya, Group-Captain W. Sowrey had under his operational control three South African squadrons, No. 1 with Gladiators, No. 11 with Battles, and No. 12 with German built J.U.86s. In addition, there was No. 237 Rhodesian Squadron with some old biplanes, and the Kenya Auxiliary Air Unit with various communication types.

At Aden, Air Vice-Marshal G. R. M. Reid, the Garrison as well as the Air Force Commander, had three Blenheim squadrons, Nos. 203, 8 and 39, and No. 94 Gladiator Squadron incomplete.

The fighter defence of Egypt came under No. 252 Wing, with improvised headquarters just outside Alexandria. No. 80 Gladiator Squadron at Amriya and two flights of No. 112 Gladiators at Helwan were initially available to meet the anticipated Italian air attack on the Fleet at Alexandria which, thank goodness, did not seriously materialize. Lack of R.D.F. was a grave handicap, particularly as no observer warning

system was possible over the sea which made a high-altitude approach by an enemy aircraft from the north and west difficult to detect.

The three remaining Blenheim squadrons, Nos. 55, 11 and 30, remained at Ismailia to be operated as required in support of Collishaw's offensive, using forward landing-grounds.

The Sunderlands of Nos. 228 and 230 Squadrons working under No. 201 Group from Alexandria had the responsible task of long-range sea reconnaissance both for anti-submarine work and to locate any ships of the Italian Fleet which might venture out into the Eastern Mediterranean. As a precautionary measure they were already on the job.

Bomber transport squadrons Nos. 216 and 70 stood by at Heliopolis and Helwan respectively to carry whatever was required: 500-pound bombs on offensive night raids or personnel and equipment to desert landing-grounds.

All these squadrons waited at their various aerodromes for the whistle to blow and the difficulty was to know the exact moment to blow it. About midnight on June 10th we got the answer from Mussolini, and in the early hours of that Tuesday morning, June 11th, every bomber which could take the air and at least half the fighter force went off to deal with the I.A.F. and such concentrated supply dumps as were known to exist.

By the 14th June reports of the results of this initial offensive had come in to my headquarters and they showed that Macdonald's Wellesleys from the Sudan and Reid's Blenheims from Aden had been particularly successful. From the former came reports of damage to enemy aircraft, hangars and supplies at the aerodromes of Asmara, Gura and Massawa. From Aden similar damage at Assab and Diredawa. At Massawa about 800 tons of petrol went up in flames. From the Western desert Collishaw reported successful attacks on El Adem airfield as well as on oil tanks and shipping at Tobruk. On the frontier at Fort Amseat an ammunition dump had been blown up.

This was a very promising start, the promptness of our air attacks within a few hours of Mussolini's declaration of war had obviously taken the Italians by surprise. Quite possibly it may have helped the Egyptian Government to make up their minds to break off diplomatic relations with Italy. It was just as well the Italians had not staged an air offensive on June 11th against the British aerodromes and military installations. As things stood,

I reckoned that we had put the Italians on the defensive for the time being but I knew full well that we could not maintain the tempo of our initial offensive. I had to make some estimate of the likely rate of aircraft replacements and of reinforcements with new squadrons before deciding what scale of air operations we could afford.

The flow of signals between Air Ministry and myself on this subject had started soon after I had arrived in May. It had not been reassuring to receive a signal in the third week in May that three Blenheims in the best possible condition were to be released from M.E. reserves for supply to Persia. Though this was subsequently cancelled, other shocks of a similar nature continued to arrive. Just after Italy declared war I pressed very strongly for Hurricanes and Blenheim IVs to be flown out from home via Malta and North Africa whilst it still remained possible to do so, but only three Blenheim IVs and six Hurricanes actually reached Egypt before the complete collapse of France prevented the further use of this route except for long-range aircraft.

At home they were obviously fighting in the air for their lives and it looked as if we should have to wait some time before any regular supply of aircraft from U.K. could be arranged. I suggested the purchase and direct delivery to Egypt of American aircraft, but that was not immediately possible. The French were getting deliveries of a very useful type of American medium day bomber, the Glen Martin 167. It was faster than the Blenheim and capable of a longer range which was what I particularly needed for strategical reconnaissance to provide both Cunningham and Wavell with information as to the scale of Italian reinforcements reaching North Africa and the route by which they were coming in. Some of these Glen Martins from America had already reached the French in Tunis and others were in ships on the high seas when the Franco-German armistice was signed. I was disappointed at not getting more than one or two from the French in North Africa before a German and Italian commission arrived on the scene and immobilized them.

In spite of high-sounding phrases of intended resistance which were coming from the French in North Africa and Syria, less than a dozen French aircraft of any sort reached Egypt. One of the Glen Martins which did arrive was flown over by a Lieut. Jacques Boulat, who took his machine straight off from the line of parked aircraft at Tunis at the time when the Germans were actually at the other end beginning their inspection to see that the necessary

vital parts had been removed. He landed almost without any petrol at Mersa Matruh; subsequently this gallant little Frenchman and his crew did good work for us in his Glen Martin till he was missing from a long reconnaissance over Abyssinia. I wished we could have had some more of his calibre.

At the beginning of July a cheerful signal from the Air Ministry gave promise of an early release of a dozen Hurricanes and a similar number of Blenheims and Lysanders; thereafter I could expect the same quota monthly. I was also informed that the possibility of sending direct from U.S.A., American fighters and bombers off French orders was being investigated; we might expect to receive some about November. Reference was also made to the opening and organization of the Trans-African reinforcement route from Takoradi, Gold Coast, through Nigeria to Khartoum and Cairo; it was hoped it would be functioning by September.

All this sounded more hopeful but the essential point was that, when these reinforcements did become available for despatch from the U.K., there should be a reasonably secure route by which they could arrive. The Central Mediterranean was definitely insecure and becoming more so; moreover, there was no doubt that a more enterprising employment of Italian bombers from I.E.A. could have troubled the Red Sea convoys considerably. All things considered I decided that my best policy would be to conserve resources in the Western Desert until our Army was ready to take the offensive or more likely become pressed by an Italian advance over the frontier; meanwhile, to harass the enemy air and submarine bases on the Red Sea coast.

About this time (July 4th) the Italians occupied Kassala and Galabat on the Sudan frontier and there was very little besides the small Sudan Defence Force to stop them. The attitude of the French at Djibouti was a definite disappointment, they seemed quite content to preserve as far as possible the *status quo*, placate the Italians and fulfil the armistice terms; thus in August we lost Somaliland and in consequence the Red Sea route looked as if it might become even more precarious. It was now practically the sole lifeline for Wavell's army and the Italians could in future use Berbera airfield.

Two Blenheim squadrons took on the Red Sea convoy escort work; No. 203 worked from Aden and No. 14 from Port Sudan. It was known that in addition to the potential air threat there were some Italian submarines left. Out of the original eight re-

ported in Massawa, four, at least, had been put out of action, and, as it turned out, the ones that remained caused little or no trouble. Fifty-four convoys were escorted by air between June and December of 1940 and only on two occasions were ships damaged; one was sunk by bombs and the other managed to reach port. The last recorded air attack on a Red Sea convoy occurred on November 3rd, 1940. This spoke well for the contribution made by these two Blenheim squadrons whose unceasing vigilance most probably dissuaded the Italian Air Force from seriously interfering with this vital L. of C.

Wavell's army was gradually being built up but was not yet in sufficient force to halt the Italian offensive which opened on September 13th before it overran Sidi Barrani. This gave the enemy the use of an advanced landing-ground and the opportunity for greater air activity, particularly for their fighter aircraft. It enabled them on several occasions to escort their bombers during attacks on Mersa Matruh. At one time, these were frequent and difficult to counter from our fighter airfields east of Mersa Matruh. However, that splendid Gladiator squadron, No. 80, brought down fifteen Italian fighters in one day, which discouraged their future activities considerably.

I think this was the first occasion on which the importance of airfields in the strategy of land warfare was really brought home to us in Middle East.

Considering their numerical air superiority there was surprisingly little inconvenience caused by the I.A.F. in the back areas of Egypt or to the Fleet base at Alexandria and the Suez Canal. It provided a breathing-space and gave us time to husband our air resources for future activities.

As an item of aviation history it is of interest to record that, at the end of June, Marshal Balbo, the Italian Governor-General of Cyrenaica, was killed in his aircraft by the anti-aircraft guns of one of his own cruisers. This Italian was an international figure in the aviation world, known to many British air-travellers; as a mark of respect I had a suitably worded note dropped over the frontier by an aircraft on reconnaissance. In due course a reply was dropped by an Italian machine from my opposite number expressing, "Deep thanks for your message of sympathy." Perhaps it was just as well that this colourful personality did not live to see the humiliation of his country in defeat. I am fairly certain that he did not relish the idea of fighting the British but he was no longer a close associate of Mussolini and probably had no influence with him.

Cairo was almost too pleasant a locality for an active war-time headquarters and, although plans were prepared for a move to the Suez Canal area, Army and Air headquarters remained in the capital in a large building close to the Embassy. My office was on the same floor as General Wavell's and our respective staffs worked close alongside each other. Admiral Cunningham rigidly kept to naval tradition and lived on board his flagship. However, he regularly flew up to Cairo for the Commanders-in-Chief Conferences and when he went to sea a naval captain remained behind to represent him as far as that was possible. This arrangement of Army and Air commanders and their staffs working together in the same building was most satisfactory and enabled us all to keep in the closest possible touch with events and to concert plans for the future.

On my staff the next senior officer to myself was Air Vice-Marshal Maund, A.O.A. (Air Officer in Charge of Administration) who was very fully occupied with the administrative problems of the whole command. Next in seniority was Air Vice-Marshal Peter Drummond the S.A.S.O. (Senior Air Staff Officer) who dealt with operations and intelligence covering all the fronts on which the R.A.F., M.E., were working; these rose to six before the end of the year: Egypt and Western Desert, Malta, Greece, Sudan, Kenya and Aden. If I was to get around and see something of the units it was obvious I needed a deputy with the rank of Air Marshal. At the beginning of June I asked for one, but Air Marshal Boyd did not leave England till November and then a Wellington landed him in Sicily and he remained a prisoner till he escaped shortly before the Italian armistice. Air Marshal Tedder eventually arrived as my deputy in December. In the meantime, thanks to a very efficient and smooth-working signal organization I was able to keep in close touch with events during my absence from Cairo on visits to units on the various fronts. Moreover, I was fortunate enough to avoid being laid up for more than a day or two at a time by one or other of the small ills that occasionally attack one in Egypt.

There are few places in which British forces are normally stationed that provide such good recreational facilities as those to be found in Egypt, particularly in Cairo. At the Gezira Country Club there were polo grounds, a swimming-bath, cricket grounds, tennis courts, croquet lawns, bowling greens, a small but well-kept golf-course, a race-track and even a children's playground, suitably equipped. Labour not being a problem in Egypt the grounds

were kept in beautiful condition and one could choose one's fancy according to the time which could be spared away from the very pressing business of a war-time office.

Curtis and I usually rode for half an hour or so before breakfast round the riding-track on the racecourse. Many others did the same: Wavell on one of his chargers and attired in a pair of black Mexican cowboy chaps over his shorts—Maitland Wilson on a heavy-weight—Russell Pasha on his famous white Arab pony—occasionally the Ambassador—perhaps also Lady Lampson and some of the officers' wives adding a touch of gaiety to an otherwise rather sombre ritual. Once or twice I found it possible to snatch a short week-end and join the Ambassador's party at Port Tewfik, where we fished for crabs from a boat, sang lustily, laughed a lot and for a few short hours gave the mind a rest from war problems. It was always a delightful interlude and one which helped to preserve a sense of proportion on return to work.

I always enjoyed my visits to squadrons on the various fronts. In contrast to the last war it was seldom that pilots or aircrew complained of the aircraft with which they were equipped, however obsolescent they were becoming. Collishaw's squadrons in the Western Desert had one general complaint, they weren't getting enough work. It was one thing to decide on a policy of conserving resources, it was quite another to get Collishaw and his braves to take kindly to it. Desert airfields provide few amenities for aircrews in their leisure hours; they were probably more comfortable in the cockpits of their aircraft in the air chasing or bombing Italians, than they were on the ground sitting in sand-blown tents, improvised huts or dugouts. Accommodation was certainly primitive and Collishaw's headquarters at Maaten Bagush consisted of a couple of portable wooden huts and a few tents, in addition to an underground operations-room which had been neatly excavated out of the sandstone. The squadrons at Fuka and Daba had much the same set-up but added certain refinements such as an officers' mess built out of 4-gallon petrol tins filled with sand, also a bar with peculiar trophies hung up ranging from an Italian aeroplane rudder to a young lady's intimate undergarment. Most of the squadrons originally had native cooks and mess staff; some of the latter did not like bombs and, being civilians, had to be replaced by inexperienced airmen untrained in such duties. This may have been an economic arrangement in peace time but was certainly a defect in war. Luckily most of these airfields were close to the coast where most excellent bathing was possible. I invariably

took the opportunity of talking to all the aircrews, explaining to them what was going on at home as far as I knew it, and the problems with which we, in Middle East, would be faced in regard to supply of aircraft and reinforcements till the threat of invasion to our own country had been removed. I must confess, however, that few of us out there realized at the time that in July, August and September of 1940 the Battle of Britain was being fought and that it was saving the country from invasion.

At the beginning of July I visited No. 201 Group at Alexandria; the acting C.O., Wing-Commander Nicholletts, showed me over this ex-Italian Yacht Club house which served not only as his own headquarters but also as those of Nos. 228 and 230 Flying-boat Squadrons. He told me of Haile Selassie's secret arrival from England by flying-boat on June 5th and of his spending the night incognito in the cloakroom of the club-house before leaving next day for Wadi Halfa.

I talked to the aircrews of these Sunderlands and congratulated them on their excellent work, particularly the crew of a 230 Squadron machine who had sunk an Italian submarine between Crete and Sicily; the pilot had then landed alongside the wreckage and picked up five survivors. At the same time I had to warn these enterprising captains of aircraft against trailing their coats too close to Italian fighter-bases. Though the Sunderlands' armament of ten machine-guns was quite formidable and though they had shot down one or two Italian aircraft that had attacked them, we could not really afford the loss of even one Sunderland if it could be avoided nor could we afford, from the maintenance point of view, having them return after a self-sought encounter looking like pepper-pots. I admitted that continually searching a normally empty sea was dull work but reminded them that their long-range reconnaissances were of the utmost importance.

On the 3rd July I was at Khartoum staying with the Governor, Sir Stewart Symes, and discussing with General Platt future prospects of giving him some air support for his defence of the Sudan. I could promise him very little except the three Wellesley squadrons, a Gladiator flight and a few Vincents already in the Sudan, all of which would be at his disposal under Air Commodore Slatter, shortly to arrive from Iraq. On the 4th, news came of the British action at Oran, so next morning I flew back to Cairo as French reactions looked like being troublesome at Alexandria and in Syria. As it turned out the French Admiral Godfrey, after talking a bit about fighting his way out and dying like a sailor,

eventually resigned himself to the inevitable; his ships had the oil pumped out of them and their gun parts were removed and deposited in the French Consulate. I quite believe that the incident showed the French our ruthless determination to win the War whatever the cost and whatever the risk. General Wavell and I lunched on board the flagship *Warspite* with the Admiral and heard the full story. He seemed quite unmoved by the anxious time he must have had when news of the incident reached the French flagship.

My next visit was to Amman, where I had last stayed sixteen years before. Air Commodore Dalbiac, the A.O.C. of Palestine and Transjordan, met me and we walked round a practically empty station. New buildings and hangars had been added but the aerodrome was now far too restricted for modern types of aircraft. There were four old Vincent biplanes and a few armoured cars. After lunch we flew on to Habbaniyah in Iraq, following the old familiar route, now very easy to see since the oil-pipe line had replaced the original plough track.

Habbaniyah air station, between the lake of that name and the Euphrates River, 60 miles to the west of Baghdad, was the home of a Flying Training School, six companies of Iraq Levies, an armoured car company, a flight of bomber transport aircraft, a large aircraft and supply depot and the headquarters of Air Commodore Reginald Smart, A.O.C. Iraq. His only out-station at that time was Shaibah, where No. 84 Blenheim Squadron and one company of Iraq Levies were quartered.

Smart took me to see the Ambassador, Sir Basil Newton, who described the unhealthy political situation with the pro-axis Prime Minister, Rashid Ali, in power. He was rather full of apprehensions for the future, the Arab world could not be expected to remain indifferent to our continued misfortunes in various theatres of war. However, the situation in general was not so bad as to prevent No. 84 Squadron being ordered to Egypt as an urgent reinforcement in September.

The accommodation and amenities at this vast air camp at Habbaniyah were excellent, the A.O.C.'s residence particularly so, but, as was discovered the following spring, the whole of the camp could be overlooked from the rising plateau outside the perimeter towards the lake.

On my way back to Cairo next day I called in at Gaza to make the acquaintance of General Tom Blamey, in command of the Australian Forces recently arrived. I discussed with him the

employment of No. 3 Australian squadron which had come with them. It had been arranged that we were to equip them with some of our Lysanders as they were intended to be an Army Co-operation squadron. I said I would like to give them fighters, Gladiators to start with and later Hurricanes when we had got sufficient. He agreed and placed No. 3 R.A.A.F. unreservedly under my direction. It was thus one of the first Tactical air squadrons.

July 26th found me at Port Sudan after arriving in a Bombay by way of the Red Sea coast. We came through a thick dust haze which merged desert and sky into one, except for a sickly yellow sun hardly visible. Port Sudan was at its worst but it had not seemed to depress Selway and his cheerful aircrews of No. 14 Squadron. The ground crews were working under the most trying conditions in the heat and dust, doing a fine job of work keeping the old Wellesleys serviceable and patching up the bullet holes. They took me to a hot swimming-pool and afterwards gave me an excellent dinner, during which I heard some of their experiences on the long bombing raids to Massawa and other Italian objectives. Their Wellesleys were occasionally attacked at long range by C.R.42s and they had nicknamed the pilot of one of these Italian fighters "Pedro." "Pedro" was a cheerful aviator who was much more concerned with doing accurate aerobatic evolutions than being really lethal. He would fire a few rounds at long range and then proceed with his aerial antics before returning home, no doubt to claim a certain kill. But the Italian pilots were not all like Pedro. In Italian East Africa they seemed more enterprising than in Libya and particularly so after a visit from their Commander-in-Chief, the Duke of Aosta, who appeared to stimulate their morale.

Next day Group-Captain Macdonald flew with me to Summit where I talked with Larking and his lads of No. 223 Wellesley Squadron. Their aircraft were well dispersed and camouflaged and the conditions were better than Port Sudan. Thence ten miles by road to Erkoweit, at 3,800 feet, where No. 47 Squadron was encamped with Elton in charge. All these three Wellesley squadrons were doing magnificently in their continued offensive against the I.A.F. over difficult country and on occasions in very bad weather; I think their success was largely due to the fine leadership of their C.O.s I was back in Cairo the next day; it had been a refreshing two days' visit, mentally if not physically.

Here I must make some mention of the excellent work done by

the Fleet Air Arm pilots and observers who frequently were landed and worked alongside our own formations in close co-operation. If there were F.A.A. fighter units disembarked at Dekheila, airport of Alexandria, they helped with the air defence of the Fleet base and the Suez Canal. Whenever I visited any squadrons in the Western Desert I was sure to find some naval flyers, usually bearded ones, with their old Swordfish biplanes taking part in harassing the enemy coastwise shipping.

On August 22nd three Swordfish carried out a most successful torpedo attack on two submarines, a depot ship and a destroyer lying in Bomba Bay. I hardly believed the report when it first came in but subsequent reconnaissance confirmed that it was correct. Three of the Italian craft were lying alongside each other close inshore and the two outer ones each got torpedoes into them; both they and the destroyer in the middle blew up and the third torpedo got a submarine lying farther out. It was twenty-six years since I had dropped the first torpedo from a seaplane successfully and I was delighted to hear of this brilliant achievement by the F.A.A.

On the 6th September a Sunderland of No. 230 Squadron took me to Malta in $7\frac{1}{2}$ hours against a strongish head wind. The seaplane station, Calafra, was much the same as when I last saw it in 1931. It might very well have been otherwise, because the night before it had been just missed by a bomb which did not explode. Though the Italians had bombed the Island occasionally the full scale of attack had not yet developed.

Prior to the war the view was officially held that if Italy was hostile there would be little prospect of preventing the I.A.F. from making Malta untenable for the operation of aircraft and probably also prevent its use as any sort of naval base except occasionally for light forces and submarines. Presumably for this reason no provision for fighter defence had been made and no organized R.A.F. unit remained. In spite of this, the A.O.C., Air Commodore Maynard, decided that the few R.A.F. pilots who were still on the island, some of them flying-boat pilots, could not look on calmly while Italian aircraft roamed overhead unopposed except for anti-aircraft fire.

He discovered four Fleet Air Arm sea Gladiators in packing-cases, held in reserve in the dockyard for the aircraft carrier *Glorious*. With the consent of the Admiral they were erected and soon took the air in the hands of the newly converted fighter pilots. Three of these Gladiators, known as Faith, Hope, and Charity,

survived for some time and accounted for a good many Italian bombers before two of them were destroyed and the survivor, Faith, was presented to the people of Malta as a relic of those strenuous days. The A.O.C.'s personal assistant, Flt.-Lieut. George Burges, was particularly successful in one of these Gladiators and was given the immediate award of the D.F.C.

Thanks to these successes as well as those of the A.A. defences, the island continued to survive the Italian air attacks. Radar (R.D.F.) was installed and I arranged that four Hurricanes out of the first consignment from home should remain in Malta to support the efforts of the Gladiators. By August 12th more Hurricanes reached the island after being flown off the aircraft carrier *Argus*. Under their stout-hearted Governor, General Dobbie, the A.R.P. measures were well organized and I could see from the behaviour of the Maltese during raids on the second day of my visit that there was nothing wrong with their morale. The sirens sounded, the buses stopped, the shutters were put up in the little shops and the people walked into one of the many shelters. There seemed to be no panic whatever and on the All Clear everyone came out and went on with their jobs.

Malta was already proving its value and it was important that it should be held. From its airfields at Luqa, Halfar and Takale air reconnaissances of Italian and North African ports and base aerodromes were possible. Fleet Air Arm Swordfish were attacking naval and other targets in Sicily. Sunderlands were using Calafra for refuelling. Bombers could be operated against Italian and North African targets, and, most important to us, it was providing an air reinforcement supply line for long distance aircraft between England and Egypt. By the end of the year a total of 49 Wellingtons, 58 Blenheim IVs and 2 Bombays had reached Egypt by way of Gibraltar and Malta.

At the end of September I decided to pay a visit to Sowrey and the South African squadrons in Kenya and left by B.O.A.C. Empire flying-boat on the 27th. Of all the various air conveyances in which I travelled from time to time these B.O.A.C. boats were the most comfortable and restful; one could always sleep, read or write in peace and good meals were served at regular intervals. After a night stop at Khartoum we reached Kisumu via Malakal and Juba on the White Nile. Sowrey and Colonel Daniels of the S.A.A.F. came to meet me and next day we flew to Nairobi in a J.U.86 over beautiful high country with a seemingly wonderful variety of crops.

Major Nicholas of the Kenya Auxiliary Air Unit showed me round Nairobi air station and later I met Sir Henry Moore, the Governor, and his wife, who were my host and hostess for the next three or four days at their delightful Government house.

The Air Force in Kenya was entirely South African except for the A.O.C. (Sowrey) and the Auxiliary Air Unit. My first visit was to Nanyuki with Lieut.-Col. Melville in command of No. 1 Bomber Brigade which at that time was little more than a wing. We lunched with No. 12 Squadron, S.A.A.F., under the shade of some trees by a stream, a tame lion cub and two cheetahs completing the party. Later we flew on to Archers Post, a well-camouflaged aerodrome thanks to the flat-topped thorn trees under which the Battles of No. 11 Squadron were dispersed round the perimeter. Major Preller, the C.O., had discovered an underground fresh-water bathing-pool with clean water, near which we had tea in the officers' mess tent. The South African Air Force was particularly good in making the best of outlandish surroundings wherever they found themselves, and they certainly had their work cut out at some of the airfields in northern Kenya and the Sudan.

Next day we flew to Garissa, the most forward airfield near the Kenya-Italian Somaliland frontier. Here No. 40 Squadron, S.A.A.F., was doing humdrum reconnaissance on a rather stagnant and featureless front. A few Gladiators were there too, as the airfield had been bombed recently. Thence we flew on down the Tana River to Mombasa and during this trip Colonel Daniels took over control and flew very low for over 100 miles so that we could see some of the rhinos and antelopes of various sorts; we watched them abandon their camouflage background and scatter in all directions. The rhinos invariably waited until we were almost directly over them. At Mombasa a detachment from No. 12 Squadron had taken over coastal patrol work from the Kenya Auxiliary Air Unit. On the return flight to Nairobi, that beautiful mountain Kilimanjaro was sticking out above a belt of clouds almost 80 miles away to the south-east.

I met General Dickinson, the Force Commander before Alan Cunningham arrived. He had two East African and two West African brigades plus one South African brigade to cover about 850 miles of front against the Italian *Banda*, colonial troops, who were making persistent raids on the frontier.

To my great satisfaction, I also renewed my acquaintance with General Baden-Powell and his wife. They were living in a charming bungalow, annexe to the Outspan Hotel, Nyeri. This grand

old man, world famous as the Chief Scout, looked a bit frail but still got a thrill out of life painting wild animals from the front seat of his car. As long as the windows were kept shut the motor-car seemed to cause no alarm to the animals. From the pictures I saw I am not quite sure whether I should have relished being his driver on these occasions. Arthur Curtis, who was with me on this trip, was delighted to see his old chief and Lady Baden-Powell, and I think they were more than pleased to see him. I can imagine no more satisfactory way to finish one's days, as this fine old man did in the following year, than in the perfect surroundings, under Mount Kenya, in which I last saw him.

Before catching the northward-bound B.O.A.C. flying-boat at Kisumu on the 5th October we stayed with General and Mrs. Lewin after inspecting the enormous new aerodrome at Nakuru, the buildings for which were on a much more modest scale than those at Eastleigh. It was to open shortly but the antelope did not know it; on the following morning they had to be cleared out of the way before our aircraft could take off.

General Lewin was a great Kenya character and the owner and pilot of a light aeroplane in which he and his wife once got lost near Juba whilst flying back from England. They have a delightful home, 7,000 feet up, and we spent a very pleasant evening hearing about Kenya's economic and social problems. We were assured that Kenya was not as black as it was sometimes painted and that the majority of the British settlers behaved quite nicely.

The South African pilot of the flying-boat "Corio" took us low over the Murchison Falls where the Victoria Nile runs into Lake Albert, and later on he pointed out to me the Elephant bridge north of Nimule where the sud of the White Nile had piled up right across the river. One could see the stream welling up in eddies on the north side as it flowed under this natural bridge.

Early in October it was announced that Sir Charles Portal was to relieve Sir Cyril Newall as Chief of the Air Staff; he actually took over on the 26th October. In a signal congratulating him on his new appointment I asked him to take an early opportunity of reviewing the Middle East air situation, particularly in the case where the Germans abandoned plans for the invasion of Britain and rapidly developed a drive through the Balkans towards Palestine, or alternately reinforced the I.A.F. in Libya. German troops had already entered Rumania on October 4th, ostensibly to reorganize the Rumanian Army.

On the 11th a signal from the Chiefs-of-Staff stated that immediate steps were being taken to accelerate Wellington reinforcements to M.E. Command and that evidence was accumulating of the passage of German mechanized forces southwards through Italy, therefore Benghazi was regarded as a focus of primary importance for air attack. As viewed by the Chiefs-of-Staff, this was the best way in which the Air Force could make effective and possibly decisive contribution towards neutralizing probable enemy land and air threat to Egypt. Tobruk also should be kept under harassing attack.

In reply to this directive I pointed out that the policy outlined was already being followed with good results but that since the Italian advance had overrun the landing-ground at Sidi Barrani, the long-range Blenheims were operating against Benghazi at extreme range. It is of interest to note the exaggerated view which was held as to the effectiveness of a comparatively few bombers operating at long range in stopping disembarkation of troops and supplies. It was probably based on our own experiences in Norway, but in that case the German aircraft were dive bombers in large numbers operating at comparatively short range which made the deployment and maintenance of an Expeditionary Force so precarious.

Mr. Anthony Eden's arrival on October 14th was a welcome event. He brought with him news of air reinforcements, and at last it looked as if I should be able to give reasonable air support to the Army in either an offensive in Libya or from the Sudan into I.E.A. There was mention of Mohawk fighters in large numbers from America (they never materialized), of more Wellingtons flying out via Malta and of Hurricanes flying across from Takoradi or shipped round the Cape. I gave a dinner-party on the strength of it and invited my various Air Officers to meet the War Minister : Smart from Iraq, Dalbiac from Palestine, Slatter from the Sudan, Collishaw from the Western Desert, Maund and Drummond from my staff.

But there was one small cloud on the horizon: for some time I had been seeing copies of the cables from the British Minister in Athens to the Foreign Office. They constantly referred to the necessity for British support, particularly air support, in the event of an Italian invasion from Albania. Still it hadn't happened yet and meanwhile we were gradually re-equipping squadrons as the new aircraft arrived.

ITALY ATTACKS GREECE. OUR WESTERN
DESERT OFFENSIVE STARTS WELL

IN the middle of October (1940) the situation was briefly as follows:

In the Western Desert the Army held a series of defended positions due south from a point just east of Mersa Matruh; the latter was in a defended perimeter. Armoured formations roamed about to the south to meet any outflanking moves by similar Italian formations. Behind this front Collishaw now had No. 33 Squadron with Hurricanes, Nos. 80 and 112 with Gladiators, No. 113 with Blenheim IVs, Nos. 211 and 55 with Blenheim Is.

For the air defence of Alexandria and the Suez Canal No. 30 Squadron Blenheims, No. 273 Squadron Hurricanes, plus one and a half Egyptian Gladiator squadrons. In Egypt No. 84 Squadron Blenheim Is had just arrived from Iraq, and No. 70 was in process of replacing its Valencias with Wellingtons at Kabrit, the first of the six Treaty aerodromes to be completed in the Canal Zone. This squadron had already begun night attacks on Italian ports. No. 216 Squadron with Bombays was also operating against Tobruk and Benghazi with such machines as were not required for important communication work. No. 267 Communication Squadron had still got only one Hudson and a Q.6 in addition to various short-range two-seaters. We badly needed a special machine at the disposal of General Wavell; instead he wallowed slowly from A to B in a Bombay. Luckily he slept well in the air, even on the tram seats of a troop-carrier or service Hudson. No. 3 Australian Squadron was completing with Gladiators.

In the Sudan, Slatter had been reinforced to the extent of another Blenheim squadron, No. 45, the Rhodesian No. 237 from Kenya which still had its old biplanes, a flight of Gladiators at Port Sudan known as K Flight, and No. 403 Vincent Flight for special work in support of the Abyssinian patriots who were just getting on the war-path against the Italians in the Lake Tana area.

At Aden, Reid had been reinforced by No. 11 Squadron of Blenheims and his garrison consisted of two Indian Infantry battalions, the Bikanir camel corps and a mountain battery.

In Kenya, No. 2 Fighter Squadron and one half of No. 1 had arrived from South Africa in addition to the original three squadrons. They had a mixture of Furies, Gladiators and Hurricanes scattered over big areas in sections of three. It was a South African idea to which Air Commodore Sowrey had agreed and somehow it worked; the Italian bombers reduced their activities as a result of these unorthodox fighter dispositions.

Italian East Africa was receiving reinforcement S.79 bombers regularly from Libya, they flew by way of Kufra and crossed the Sudan by night. It was difficult to intercept this aerial traffic but on one or two occasions the Wellesleys, by careful timing, arrived over the terminus aerodrome at first light and bombed the new arrival. It is of interest to record that at least four or five dismantled C.R.42s were also carried across from Libya inside the big S.82 freighters. We judged that at present rate of consumption, stocks of petrol should last them another eight or nine months provided the French at Djibouti did not hand over the odd 600 tons believed to be there. I had grave doubts as to whether the naval blockade was really complete. There was nothing much to stop a Japanese ship from unloading some fresh supplies on the Italian-Somaliland coast.

In Egypt, the Prime Minister (Sabry) and the people were obviously deeply impressed with the magnificent successes at home against the German air attacks and hardly less so by the wonderful, courageous spirit of the people of Britain in their trying ordeal.

On the 28th October I flew down to Khartoum to take part in a conference with General Smuts, his South African Chief-of-Staff Sir Pierre Van Ryneveld, General Wavell, Mr. Eden and General Platt; we discussed plans for an offensive against Italian East Africa both from the Sudan and Kenya. From the time that Italy entered the war and operations in East Africa had begun, it seemed clear that, if Italian East Africa could be finally liquidated by the spring of the following year (1941), it would set free for operations elsewhere the land and air forces in Sudan, East Africa and Aden and, moreover, it would ensure the safety of the Red Sea route. It was a good strategical proposition but it needed some more reinforcements, land and air, to ensure success and the difficulty was to find these without endangering Egypt. It was obviously necessary to deal a severe blow to Graziani and his Italians in the Western Desert before any reinforcements could be spared from Egypt for the Sudan front.

Haile Selassie had been in Khartoum, still incognito, since

of the previous day and that the Italians had crossed the Albanian-Greek frontier. I returned to Cairo immediately as it was quite obvious that although the Chiefs-of-Staff at home had, as yet, given no instructions that help was to be sent to Greece, it was inevitable that at least British fighter protection to Athens would be demanded. The argument would not be convincing to the Greeks that we were already assisting them by containing large numbers of Italians in Libya, both on the ground and in the air, nor that the British Navy in the Mediterranean would prevent a sea-borne landing on Greek mainland territory. Palairët's encouragement to the Greeks to oppose the Italian invasion made it essential that at least a squadron should be sent over immediately, and No. 30, half Blenheim fighters and half bombers, was despatched to Athens without further delay. I informed the C.A.S. of my action and received in reply a complimentary signal to the effect that I had taken a very bold and wise decision and that he hoped to reinforce me as soon as possible. That was most encouraging, and as the Blenheim fighters had had an early success in shooting down an Italian bomber over Athens I hoped that I should not be required to send any more from the small force available to support Wavell's Western Desert offensive due to start in the very near future.

However, it was not to be and on Eden's return from the Sudan on the 30th October a signal from the Prime Minister awaited him to the effect that Greece must be helped to the limit of our capacity. As a result I was committed to sending three more squadrons, Nos. 211 and 84 Squadrons, Blenheims, and No. 80 Squadron, Gladiators, which flew over to Greece between the 14th and 23rd November.

It was particularly at this time that I felt the need for more transport aircraft, the few Bombays available in 216 Squadron were insufficient to meet the rapid switching of squadrons from one theatre to another and many of the ground crews had to await sea passage to Greece. I asked for more Bombays even at the expense of Wellingtons, but only two reached me via Malta before the end of the year.

To command the British Air Force contingent in Greece and with the approval of Air Ministry, I sent Air Commodore John Dalbiac from Palestine; he assumed command on the 6th November. There being no provision in establishments for additional staff officers to meet such new commitments as Greece I had to denude other formations. It was a defect in the organization that no pool

of staff officers to meet emergencies including sickness or casualties had been authorized by Air Ministry.

Reinforcement Wellingtons were now passing through Malta *en route* to Egypt and the arrangement was that some sixteen of them should at any one time be available at Malta for operations against Italian ports either in North Africa or Italy. For a short time a certain amount of confusion arose as to whether Air Ministry or I should give them their objectives, we both had ideas on the subject and eventually it was ruled to be my responsibility but that efforts should be directed to afford help to Greece by attacks on Italian communications with Albania. Alternative targets should be Italian centres of communication, excluding Rome.

Within a fortnight of the Italians attacking Greece the British squadrons, still further reinforced by Wellingtons, were giving valuable and encouraging support to the Greeks. In the early stages the Italians had made some small progress into Greek territory, supported by Italian air attacks which the numerically inferior Greek Air Force was unable to check. Coinciding with the arrival of the British squadrons the situation changed to the advantage of the Greeks in their frontier operations. By the third week in November they had captured Koritza and driven the Italians back across the frontier. These successes were supported by the attacks of our Blenheim squadrons on Valona and Sarande Bay, as well as on the aerodromes in Albania within reach. Wellingtons from Malta were also attacking the Adriatic ports of Bari and Brindisi, whence reinforcements were going to Valona. In addition the Fleet Air Arm had made their famous attack on Taranto (November 11th), details of which I heard from the Admiral when I saw him on his return from this very enterprising naval operation. The standing patrols of the Blenheim fighters in the vicinity of Athens seemed to have had the desired effect as no heavy enemy air raids had developed in that direction after the original combat success of No. 30 Squadron. The Greeks were certainly receiving all possible support from the Navy and R.A.F., and it was an appropriate moment to pay a visit and see how Dalbiac was getting on. I flew over to Athens on the 22nd November in a Sunderland and found him established with his headquarters at the Grande Bretagne Hotel. King George II, General Metaxas (the Prime Minister) and General Papagos the C.-in-C. of the Greek Forces also had their headquarters in the same building and I was granted an interview with them.

The King appreciated the prompt arrival of the Blenheim squadron to protect Athens, but having listened to the B.B.C. broadcasts during the Battle of Britain giving details of the splendid performances of the Hurricanes and Spitfires he asked why none of these fighters had been sent to Greece. Could we not spare some more from Egypt and why were they not being flown out to Greece from England?

Papagos seemed rather subdued and not as pleased as I should have expected with the successes of his Army. On the other hand, Metaxas impressed me considerably, he seemed alive and quick to grasp a point. After listening attentively to my view of the situation in the Middle East generally he could judge for himself how generous had been our air support. He was proud of the Greek successes, the first of the Allies to carry the offensive to enemy territory. He hoped it would have its effect on Turkey, Jugo-Slavia, possibly even Bulgaria. He spoke of chasing Italians from Albania, of future bridgeheads in the Balkans from which allied armies might advance to fight the final land campaign against the Germans. Where else could this be fought, certainly not in North Africa where, he said, static war appeared to have set in! Were these subjects being studied by the higher direction but also, more immediate, what was proposed by the British in event of a German advance towards Salonika?

I assured him that these points were under active consideration by the Planning Staffs, that Greek successes against the Italians were considered remarkable, that it was bound to affect Italian morale, but warned him against overestimating Italian dependency in Libya and I.E.A. and suggested the possibility of Italian counter-attack in Albania supported by a reinforced air effort.

In company with Dalbiac I visited all our R.A.F. units. At Elefsis, just to the west of Athens, No. 30 Squadron Blenheim fighters and a flight of No. 80's Gladiators were installed for the fighter defence of Athens on an aerodrome which was liable to go out of action for short periods after heavy rain. Arrangements were being made for a proper hard-core runway. At Tatoi, renamed Menidi, the other side of Athens the aerodrome was more weather-proof and here I found Nos. 84 and 211 Blenheim Squadrons. These Blenheims continued to operate whenever weather conditions permitted against military objectives in support of the Greek Army, against enemy aerodromes and the Italian base port of Valona. By the end of the year out of a total of 235 sorties over

the mountainous country where the fighting was in progress not less than 56 were abortive due to inability to find the target in bad weather. This being the only aerodrome from which Wellingtons could operate, a flight of them came over from Egypt to work during the moon period against objectives at Bari, Valona, Brindisi and Durazzo on which they unloaded over 45 tons of bombs. There were too many high mountains about to operate without a moon, and an attempt was made to employ them in daylight using cloud cover, but standing enemy fighter patrols over Valona began to take too heavy a toll of them.

Wing-Commander Lord Forbes flew us up to Trikkala, in his Q.6, to see No. 80 Gladiator Squadron, but the landing-ground was water-logged so we had to land at the adjacent aerodrome of Larissa, at that time occupied by some Greek air units. I was disappointed in not being able to see No. 80 on this occasion, for they were piling up a remarkable score of successes; by the end of the year, actually in 55 days, they had brought down 42 Italian aircraft confirmed and 12 unconfirmed for the loss of only 5 of their own; their very gallant commander, Squad.-Leader W. J. Hickey, being one of them. Dalbiac arranged for them to use Larissa during the bad-weather period as the aerodrome there was large and reasonably weatherproof. Both Trikkala and Larissa were on the east side of the Pindus mountains which had to be crossed on every sortie in support of the Greek Army in Albania. Aerodromes on the west side were essential and Dalbiac pressed the Greeks to prepare Araxos and Agrinion near Patras. He could do no more than rely on Greek goodwill to get the necessary work done, for there were no such units as mobile airfield construction companies in Middle East at that time nor any bulldozers or special equipment to speed up the work.

Of the precise composition of the Greek Air Force at the beginning of the war I have no exact record, but apart from a few Blenheims left serviceable I remember seeing a variety of types which were rapidly dwindling owing to casualties of one sort or another. They had operated quite successfully in the early days but at the time of my visit practically the whole of the air effort devolved on the R.A.F.

Before returning to Cairo I saw the King, Metaxas and Papagos again. This time they were more enthusiastic about the excellent work of the R.A.F. in Greece and, indeed, of the effect of British naval power in the Eastern Mediterranean, but they continued to harp on the necessity for more aircraft, claiming that

the recent Italian bombing of their forward troops had delayed the Greeks for two days and prevented the enemy retirement being turned into a rout.

I told them of the result of my visits to the squadrons and pointed out as tactfully as possible that even if they could be spared from Egypt, which they could not, it was little use sending more squadrons over to be bogged down on water-logged aerodromes or grounded by reason of most indifferent winter weather. Squadrons were far better employed for the time being against the common enemy on the fronts where weather conditions permitted their more regular use. I hoped that the new airfields would be ready early in the new year. I said much the same to our Minister (Sir Michael Palairet), emphasizing the real difficulties with which we were faced during the next critical two months when air reinforcements from home would be seriously behind programme. I reminded him that the R.A.F. had been sent to Greece at the expense of air support to the British Army in the Western Desert, but I could not divulge that within a fortnight Wavell's Libyan offensive was to be launched and would need all the air support I could give it.

On the flight back to Cairo I had intended to call in at Crete but it was blowing a gale and too rough for our Sunderland to land in Suda Bay without risk of damage. The importance of Crete, particularly to the Navy, had for some time been fully recognized and, on the entry of Greece into the war, Suda Bay was at once prepared as an advanced naval base with a battalion (later increased to two) ashore as garrison. Only one aerodrome existed, Heraklion on the coast near Candia, suitable for and used as a refuelling landing-ground for aircraft *en route* to Greece but too far from Suda Bay for air defence purposes. A site was eventually selected at Maleme, 11 miles west of Suda Bay, and it was subsequently developed as an aerodrome for protection of the advanced naval base; it was small, close to the sea and had little scope for adequate dispersal. Steps were taken to enlarge Heraklion and also to develop another suitable site south-east of Candia in the Kestelli area, but again it was a case of manual work with Greek labour and in the valley of Kestelli progress was delayed by flooded ground. Up to the end of December Italian aircraft from the Dodecanese had not seriously interfered with our staging-post at Heraklion and only once did they attack Suda Bay, unfortunately a successful attack which resulted in the torpedoing of a cruiser.

There were visions of the main sphere of operations moving from Africa to the Balkans and considerations were being given to reinforcements additional to those promised, such as six fighter and six medium-bomber squadrons. I was asked whether present administrative and depot organization could maintain these additional squadrons without heavy reinforcements to such services. It referred to the necessity of pressing on with aerodromes in Turkey and Greece— islands and mainlands. Plans should be made on basis of operating high proportion of Air Force at present in Egypt and Greece—say a total of ten fighter, ten medium- and three heavy-bomber squadrons. Greeks and Turks must be urged to prepare at once all-weather aerodromes with long runways, approach roads and communications, etc. The signal finished on a more realistic note: "If necessary for the security of our forces in Egypt you have authority to withdraw 1 Gladiator squadron from Greece without previous sanction from here, although you should consult us if time permits."

On receipt of this message I took a deep breath, told my A.O.A. (Maund) to figure out the additional load on his maintenance services and then turned my attention to the realities of the moment, for it was only four days before the whistle was due to blow and Wavell's offensive was to start.

The aircraft carrier *Furious* had arrived off Takoradi on the 28th November and flown off 36 Hurricanes of which I calculated on getting 75 per cent. across the air route safely and ready for operations within a fortnight; actually I got 27 and they were ready by the 12th December. A good batch of Wellingtons and Blenheims had also arrived recently, so the picture was improving.

A rough calculation of the I.A.F. in Libya in early December gave a figure of approximately 250 bombers and 250 fighters, and of course such additional reinforcements as might be flown over from Italy. If our Army was to be properly supported and be reasonably immune from air attack we should have to put in our maximum effort and this had entailed calling on Aden and Sudan for reinforcing squadrons, and it also meant denuding Alexandria and the Canal area of effective air defence.

These risks were accepted, and by agreement with Admiral Cunningham and after a mental apology to the Italians for the insult, two Fleet Air Arm sea Gladiators took over the defence of Alexandria and the Suez Canal; No. 274, a new Hurricane squadron, then moved up to join Collishaw's group. No. 45 Blenheim Squadron had been recalled from the Sudan and Nos. 11

and 39 Blenheims from Aden; even half a dozen Gauntlets, predecessors to the Gladiator, were pressed into service. These,¹ in addition to the Bombays and Wellington night bombers from Nos. 216, 70, 37 and 38 Squadrons, formed the air contribution for the support of the Army in their offensive which opened on December 9th. Except for the army co-operation squadrons all these came under the operational control of Air Commodore Collishaw, A.O.C. of 202 Group.

As No. 2 R.A.F. Armoured Car Company at Ramleh seemed unlikely to have very much to do in Palestine I had already attached twelve of its vehicles and crews to the XIth Hussars in the Western Desert. The R.A.F. had the same type of armoured car as that famous regiment which through being usually the unit nearest the Italians had rescued quite a number of our airmen either forced to land or after "baling out" in forward areas. The R.A.F. armoured cars proved a useful reinforcement to the XIth and the crews gained valuable experience.

From the beginning of December our bombing offensive against enemy rear aerodromes by night had been gradually stepped up. The night bombers from both Egypt and Malta hit Castel Benito near Tripoli, and Benina and Berka near Benghazi, whilst the Blenheims attacked the more forward aerodromes the day before the land offensive opened. This undoubtedly resulted in the destruction of many enemy aircraft and also in rendering many more unserviceable, while in the case of those at forward aerodromes they were overrun by the rapidity of the advance.

The numerical superiority of the Italian fighters over our own amounted to nearly four to one but of our 65 fighters there were 35 Hurricanes with superior performance to the C.R.42s. I told Collishaw to try and get the Italian fighters on the defensive by using his Hurricanes for low-flying attacks on Italian lines of communication immediately in rear of their forward troops and, as soon as within range, to use them for low attacks on the fighter aerodromes. These were the only instructions in detail I gave to Collishaw, otherwise it was left entirely to him to support General Dick O'Connor, Commander of the XIIIth Corps, with everything he had and as he thought best.

The plan worked successfully and kept a large number of C.R.42s busy chasing Hurricanes which they couldn't catch, whilst

¹ Nos. 208 and 6 Army Co-operation, No. 3 Australian, Nos. 33 and 274 Hurricanes, No. 112 Gladiators, Blenheims of Nos. 55, 11, 45 and a flight of 39, and No. 113 Blenheim IVs.

at the same time the enemy supply lines and subsequently his retreating columns were constantly harassed. Less and less interference by enemy aircraft was experienced by the forward troops who suffered very few casualties from air attack. A new feature of this method of operating fighters was the valuable tactical reconnaissance reports brought back by the pilots.

Before the offensive opened it had become quite clear that Lysanders were too vulnerable to operate with any air opposition about, and for this reason I had re-equipped a flight of No. 208 Squadron with Hurricanes for tactical reconnaissance, an innovation which proved most successful.

Before and during the operations, strategical reconnaissance was done by No. 113 Blenheim IV Squadron. Since the war started this squadron had a fine record of regular long-range reconnaissances and during this particular offensive it was required to keep the area east of Benghazi under constant observation, a none-too-easy task since we could not afford such luxuries as defensive fighter escorts. By using the sea route or a desert route far to the south on the way out or on the return they seemed to get away with it somehow.

This first British offensive in any theatre of war was launched in the early hours of Monday morning the 9th December. Many historians have dealt in detail with the subsequent and successful land operations and so I will keep to the headlines, with a few additional remarks about the air, and some of my own impressions. Frankly I was surprised at the magnitude of the initial success and the rapidity with which some of the Italian perimeter camps south of Sidi Barrani surrendered. Our attack had been well planned and the new tanks of the 7th Armoured Division were too much for the Italians though their artillery put up quite a stout defence here and there.

In the air we had started well and on the first day had bagged 11 confirmed and 4 unconfirmed of those C.R.42s and S.79s which were encountered, but they were not in great strength and our troops on the ground suffered little inconvenience from them. We were to discover the reason for this seeming lack of enterprise on the part of the Italians as the advance proceeded and overran some of his aerodromes.

I flew out on the 13th to see Collishaw and some of his squadrons. The sand was blowing a bit as it usually did after about nine or ten o'clock in the morning whenever the wind blew at over 15-20 miles an hour. It was due to some extent to the

large number of tracked and wheeled vehicles which had broken up the normally thin crust on the surface. This blowing sand continued to be a handicap to landings and take-offs, not to mention ground work of all sorts. However, flying was going strong and all those aircrews and airmen I saw were in splendid spirits.

A gratifying sight from the air was the long string of Italian prisoners coming back from the front. I saw one complete division marching east in the desert.

It was difficult to get a complete picture as signal communications were very interrupted from one cause or another, but thanks to Group-Captain L. O. Brown, who was with General O'Connor, squadrons were somehow kept informed of the progress of the advance and thus no unfortunate incidents occurred.

The late Philip Quedalla in his book *Middle East 1940-42* has given an accurate and interesting account of the part which the R.A.F. played in this desert offensive which by the end of the year had cleared Egypt of all enemy forces and reached the perimeter of Bardia where the Italians were putting up quite a stout defence.

Compliments, congratulations and kind words poured in from every quarter—War Cabinet, Prime Minister, Secretaries of State and Chiefs-of-Staff. It was really the first British success on land to be recorded during the war and it seemed to appeal to the people at home. The Egyptians were delighted, a very real threat had been removed within those few days; our attack had only just forestalled Graziani's attempt to advance farther on the road to Alexandria.

At the end of the year Collishaw came with me to Luxor for two or three days as a welcome change from the Western Desert. The Lampsons and Pam Hore-Ruthven were there, also Freya Stark who was doing such splendid work with her "Little Brethren" activities, the story of which is so delightfully told in her book *East is West*. We rode donkeys, saw the sights and, as one would expect in such pleasant company, it was altogether a most refreshing interlude in a very strenuous period.

THE FLOOD TIDE OF VICTORY

OWING to a spirited defence by Italian gunners, Bardia proved rather a harder nut to crack than was anticipated. As a prelude to the Army's assault the defences were subjected to a heavy naval and air bombardment. During the night of the 1st-2nd January (1941), following many previous attacks, Wellingtons and Bombays together with Fleet Air Arm Swordfish dropped over 20,000 pounds of bombs in the softening-up process. Blenheims continued the attacks during the day on the 2nd with some forty-four sorties, followed by further efforts of Wellingtons and Bombays with another 30,000 pounds of bombs on the night of the 2nd-3rd. The total bomb load dropped during this series of attacks amounted to over 40 tons.

At this time the Italian Air Force was still active despite the heavy losses inflicted on it and it was necessary to use the Blenheims as much as possible on bombing the enemy airfields at Gazala, Derna and Tmimi. The Hurricanes of Nos. 33, 73 and 274 Squadrons and the Australian Gladiators of No. 3 R.A.A.F. Squadron maintained offensive patrols over Bardia during the attack on the 3rd. Under this fighter cover the Lysander flight of 208 Squadron was able to co-operate with the artillery.

The assault was made at dawn on January 3rd by tanks and Australian infantry; Bardia finally fell on the 5th January.

Intelligence reports now began to hint that German air squadrons were arriving in Italy but where they were to be employed was not yet clear. It might be against the Greeks, or for an offensive on the Suez Canal area from the Dodecanese, or for an all-out air attack on Malta or, more probable, to support what remained of the I.A.F. in Cyrenaica. Anyway, as long as the Army kept going in Cyrenaica it was our business to keep with them and give our utmost support. It was obvious that our initial success, unexpected in extent, should be exploited to the full.

By the 7th January our armoured forces, advancing under cover of offensive fighter patrols, had reached the 30-mile outer perimeter defences of Tobruk. They had also overrun El Adem airfield, where the Italians had abandoned some forty damaged

aircraft, tribute to our successful bombing and machine-gun attacks. A further thirty-five were found burnt out at Gazala a few days later, and from that time onward during the advance the Italian Air Force hardly showed up at all except for an occasional night raid by single aircraft.

All this time signals were passing between Air Ministry and myself on reinforcements, re-equipment of the Greek Air Force, flying instructors for Turkey, and the possibility of operations in yet another theatre of the Mediterranean. On the 6th January a signal arrived from Air Ministry to say that owing to the need for conserving shipping and increasing the strength of Bomber Command the further reinforcements of 6 fighter and 6 medium-bomber squadrons previously referred to were unlikely to materialize. Another signal reminded me of the great importance attached to maintenance of Greek morale and the necessity for me to consider additional fighter support. The following day one from the Prime Minister, himself, greatly admiring our brilliant support of Army operations and congratulations upon a victory over enemy Air Force achieved against heavy numerical odds. The signal went on to say that we should soon be, as usual, torn between conflicting needs. Support to the Greek Army to keep them in the field was of prime importance. Admiralty were being asked to send by carrier to Takoradi further air reinforcements. It was probable that four or five squadrons would be required for Greece and yet we would have to continue support to our Army in its Libyan offensive. I might count on being thoroughly re-equipped.

This was followed immediately by another from C.A.S. to the effect that anxiety about Greece was increasing and that Germans were assembling considerable land and air forces in Rumania. An early advance on Thrace through Bulgaria seemed probable. How much could I send to Greece and where should it go? I was to consider with Wavell whether air units from Sudan could now be spared.

On the 9th January I sent a very full reply to Air Ministry stating that the Greek situation had been fully discussed with Dalbiac and that instructions had been given for No. 112 Fighter and No. 11 Bomber Squadrons to proceed to Greece with whatever Gladiators and Blenheims respectively could be made available to them. Some Gladiators might be taken from the Sudan but the other squadrons there, also those in Kenya, were waiting for re-equipment and in the meantime they were very

fully occupied supporting Army operations with their obsolete aircraft. I pointed out that no more squadrons from Egypt could possibly be spared until the situation as a result of the Libyan offensive had become more stabilized. Hurricanes, Blenheims and Wellingtons were continuing to destroy the I.A.F. and in the past three days over 75 had actually been burnt out or destroyed on their aerodromes. At the same time, Italian or German reinforcements to Libya might at any time increase resistance and produce a difficult situation for the armoured division then far forward in the area west and south of Tobruk. I again referred to the winter conditions in Greece and that Dalbiac had confirmed that until the spring weather hardened up the forward airfields, Hurricanes could not be operated. Until Araxos and Agrinion were ready, possibly by the end of February, it was no use sending further Blenheims or Wellingtons even if they could be safely spared from Egypt. I had fully discussed the situation with Wavell, who was reluctant to abandon the Sudan offensive, just about to start, or curtail his successful advance into Libya and these operations would continue to entail the maximum support of the squadrons already engaged.

On the 10th January the Chiefs-of-Staff signalled that assistance to Greece must now take priority over all operations in Middle East once Tobruk was taken. The signal went on to say, however, that this need not prevent an advance to Benghazi if the going was good, nor need the Sudan operations be abandoned. This was very encouraging for it meant that I could still employ our small desert air force at maximum intensity in support of the Army in their continued successful offensive rather than plant squadrons on wet airfields in Greece where winter weather conditions were still restricting active air operations.

On the 11th January I flew out to see how No. 202 Group was getting on and found Collishaw with his headquarters at Sollum installed at the police barracks on the hill near the airfield. With him I drove out to Bardia past streams of Italian prisoners plodding along the side of the road in a cloud of dust. General Maitland Wilson described to us how the outer defence perimeter had been penetrated by tanks and we saw the elaborate dug-outs built by the Italians. Derelict transport and guns of all sorts were lying about just as the Italians had left them and the ground was littered with private letters, food and bottles of all descriptions. In the small port itself there were three or four sunken ships, the result of either naval or air bombardment.

The experiment of using a few Hurricanes for tactical reconnaissance in No. 208 Army Co-operation Squadron had proved a complete success and could now be generally introduced as soon as we had enough of these fighters to replace Lysanders. I flew on to Gambut and found No. 3 Australian Squadron in fine fettle; they had made a useful contribution with their Gladiators to the defeat of the I.A.F. I promised them Hurricanes as soon as I got some more. That night I stayed with Collishaw at Sollum and got bombed by a single Italian machine which wounded one officer. Next day I visited one or two of the other squadrons which had moved up to more forward airfields. Their administration problems were beginning to reveal themselves and it was clear that they were not completely organized for such rapid mobility as might be anticipated in the very near future. However, they were all in high spirits and the ground crews were keeping their aircraft flying in the most praiseworthy manner. A Repair and Salvage unit at Fuka was doing great work in the repair and overhaul of aircraft and in the salvage of those that had landed or crashed out "in the blue" away from airfields. They repaired those that were less damaged and sent the rest back to the larger maintenance units at Aboukir, Abu Sueir and Helwan.

The softening up of Tobruk was in full swing with bombing attacks, to destroy defences and wear down resistance. All remaining enemy airfields were under frequent attack; particular targets at this time were Berka and Benina near Benghazi. It was not going to be very long before the main assault on the outer perimeter of Tobruk would be staged.

On the 14th January I flew to Alexandria and lunched with Admiral Cunningham on board *Warspite*. He told me of the air attack by German J.U.87s and 88s on his ships near Malta, as a result of which the *Southampton* had been sunk and the aircraft carrier *Illustrious* hit by no less than six large bombs, but had survived. So the Hun had opened his air offensive in the Mediterranean and now, having virtually knocked out the Italian Air Force in North Africa, we were to face a far tougher proposition in the shape of the German Luftwaffe, though in what strength and exactly where, we were left to guess.

Next day, the 15th, I flew over to Greece in a Sunderland. Other passengers included Prince Paul of Greece and Colonel Donovan, one of President Roosevelt's emissaries, who had arrived in Cairo a week or so before and was getting information on the exact situation in the Mediterranean and Balkans. On this trip he

was accompanied by Colonel Dykes of the War Cabinet Office and he intended going on to Bulgaria.

Wavell had been in Athens three days discussing the question of military assistance in addition to the air support they were already receiving. For the second time I attended a meeting with the King, Metaxas and Papagos at which the need for more R.A.F. squadrons was stressed and for aircraft to re-equip the Greek Air Force. The offer of military assistance, however, was politely declined (*a*) because that offered was not considered sufficient, if sent to the Salonika front, to balance the risk of prematurely provoking German aggression and (*b*) its employment on the mountainous Albanian front would involve too many administrative problems. The lines of communication were already at full capacity even for the existing scale of operations and it was known that the British Tommy needed a much fuller ration than the Greek mountain soldier. However, these arguments did not apply to equipment and supplies of all sorts and they gladly accepted Wavell's offer of such assistance.

The refusal by Metaxas to admit British forces in the Salonika area also applied to the R.A.F. but it was agreed that the Greek Air Force should go there to re-form and re-equip, and this would give opportunity for developing the airfields. I asked for airfields to be prepared south and west of Mount Olympus sufficient to accommodate and operate a total of 14 squadrons; Dalbiac pointed out exactly where these airfields were required. I laid emphasis on the fact that until these were available no more aircraft than they had at present could operate, however many were sent over.

I visited Menidi and spoke to all the aircrews of Nos. 211 and 84 Blenheim Squadrons, and to those who were over there from No. 70 Wellington Squadron doing night attacks on Adriatic ports during the moon period. At Elefsis, the other Athens airfield, I saw No. 30 Blenheim Squadron and also No. 80 Gladiators, who were *en route* from Larissa to Janina, the Adriatic side of the Pindus mountains. I heard how these four squadrons had given close-range support to the Greeks in their successful mountain offensive which had resulted in the capture of Kelcyre on the 8th January. Tribute had been paid by the Greek Commanders to the work of the R.A.F. in softening up their objectives before the ground attack. From their positions in the mountains the Greeks could see the accuracy and effectiveness of the bombing on the village below and could also watch the Gladiators of No. 80

Squadron at work piling up their score of destroyed Italian aircraft which was to reach a high figure before they finally flew away from Greece. Though text-books and staff college teaching had laid down that an air offensive should be against rear lines of communication rather than an intimate participation in the battle there was much to be said for close-range support visible to the troops who were about to make the attack. There is no doubt that this departure from the orthodox was a great stimulant to morale in the case of this Greek-Italian conflict in the mountains of Albania.

Before returning to Egypt I witnessed the arrival of a large convoy of 20 supply ships and saw the enthusiastic welcome by the onlookers as they came into the port of Piræus. After a final audience with the King, during which nothing fresh emerged, I flew back on the 19th to Cairo in one of the three Lockheed 14s which had arrived from South Africa as promised by Van Ryneveld. A thick dust haze covered Cairo as we nosed our way into Heliopolis airport in time for lunch.

Back in my office that afternoon I read through the letters and signals that had arrived during my three days' absence in Greece. General Platt had opened his Sudan offensive at Kassala that very morning. The German dive-bomber attack had opened on Malta, which the Hurricanes had dealt with to such good purpose that at least 20 J.U.87s had been destroyed in the first three days. In a letter the sad news came that delivery of Mohawk fighters was indefinitely held up and that certain defects had revealed themselves in the Tomahawks on which I had counted to rearm the remaining Gladiator squadrons. A signal, that in view of the Greek attitude as regards military assistance and their objection to the use of Salonika airfields by the R.A.F., did I wish to retain No. 33 Hurricane Squadron in Egypt if that would give sufficient fighter protection to support a further advance to Benghazi? Another signal drew attention to the need to continue the use of Malta as a fleet and air base and that I should consider reinforcing the island with more Hurricanes. All of which was quite sufficient food for thought for one afternoon and my only immediate reaction was to hold up the despatch of No. 33 Squadron to Greece until I could arrange for a satisfactory air defence of Alexandria and the Suez Canal, now threatened by the arrival of German aircraft in the Dodecanese. It was important to deal effectively with the first visitors from there; after an initial success it might again be possible to reduce the defence to an almost negligible

quantity and employ the fighters offensively elsewhere, but meanwhile the ships in Alexandria harbour were precious and the Suez Canal had to be kept open. One or two parachute mines had already been dropped in it at night, a ship had been sunk and it had been closed for a short period in consequence.

The assault on Tobruk was now imminent. On the nights of the 19th–20th and 20th–21st Wellingtons and Blenheims dropped 20 tons of bombs and the Navy bombarded it from the sea. On the 21st the attack was launched at dawn, the outer perimeter was pierced by tanks followed up by Australian infantry. Blenheims of Nos. 45, 55 and 113 Squadrons as well as Hurricanes and Lysanders of No. 208 Squadron gave direct support ahead of the attack; fighter cover was provided by No. 3 Australia's Gladiators and the Hurricanes of Nos. 73 and 274 Squadrons. Very few enemy aircraft appeared and only one engagement took place. Before midday the Australians had entered the town but the enemy continued to hold out in the north-west sector until the final mopping-up operations which took place on the 23rd. Once again a large number of prisoners, some 25,000, were taken, but General Bergonzoli the Italian Commander, commonly known as Electric Whiskers, was not amongst them. He had flown out in the last plane to leave the airfield inside the perimeter. When Bardia was about to fall he had walked out and had made his way to Tobruk and he was not put in the bag till Benghazi was captured.

After Tobruk the next objective was Derna and in preparation for supporting the attack Collishaw moved his group headquarters to Sidi Mahmoud, Nos. 73 and 274 Hurricane Squadrons to Gazala and No. 3 Australian and No. 208 Army Co-operation Squadrons to Tmimi. The main body of Australian infantry now pushed on northwards towards Derna and the armoured formations westwards to Mechili.

By this time another important directive had been received from the Chiefs-of-Staff dated the 21st January and addressed to the Commanders-in-Chief, stating that the future policy of the Near and Middle East had been reviewed in the light of (a) the Greek refusal for immediate assistance by British land forces and (b) the arrival of the Luftwaffe in the Mediterranean. The capture of Benghazi was now of the greatest importance and it should become a strongly defended naval and air base. It was most important that the Dodecanese, particularly Rhodes, should be captured as soon as possible and reference was made to three special Glen ships being available for transport of troops. A

strategic reserve should be created with special reference to rendering assistance to Turkey or Greece within the next few months. It was hoped that this force might soon attain the equivalent of 4 divisions. There should be air dispositions to conform to above, subject to the despatch of Nos. 11 and 112 Squadrons to Greece as arranged. It was the first duty of the A.O.C.-in-C. to maintain sufficient Air Force at Malta to sustain its defence. The signal finished by stating that the aircraft carrier *Furious* would make another voyage (to Takoradi) with a third consignment of fighters.

In another signal of interest the Air Attaché in Turkey quoted Turkish demands for equipment which included 500 first-line aircraft of latest type from England or America, including bombs, fuel, training aircraft, A.A. guns, lorries, etc.

On the 25th January came a further signal from Chiefs-of-Staff to Commanders-in-Chief referring to their previous directive and stating that in the view of the Defence Committee the arrival of the Luftwaffe in Sicily had affected any immediate chance of capturing that island but that, nevertheless, plans should be ready for its capture. The C.s-in-C. would now be responsible for planning this operation though it was realized that the operation might not be feasible until arrival of special Glen ships and probably not until after the operations for the capture of the Dodecanese.

On the 27th I signalled C.A.S. in reference to the latest directive asking for some hypothesis on which the planning staff could work in preparing plans for the capture of Sicily. Was it to be assumed that the R.A.F. were still supporting Army operations on the Sudan and Kenya fronts, escorting convoys in the Red Sea, defending the naval base at Alexandria and the Canal area from Italian and German aircraft which were still using bases in the Dodecanese? Was it to be assumed that we were still supporting the British Army in Libya against German and Italian air opposition, perhaps defending Benghazi and its long line of sea communications, and lastly but by no means least should we take into consideration the fresh air commitments in Greece which would be inevitable in the spring? All the above considerations materially affected any estimate of total fresh air reinforcements required for the capture of Sicily. I asked whether Air Staff had attempted to work out what was the maximum number of squadrons of varying types which could be maintained in the Middle East, having regard to the limitations of existing air and sea lines of communication.

With the Mediterranean practically closed and the German submarine campaign in full swing, there was definitely some limit and experience hitherto had shown it was a comparatively low one. I was still waiting for aircraft to equip No. 39 Squadron, which had none. I was also waiting to form four fresh fighter squadrons and Nos. 47 and 223 Squadrons still had obsolete Wellesleys in the Sudan.

There was at this time an idea at home that the Turks might decide to play a more active part in opposing the threatened German advance in the Balkans. For this they would have needed considerable air support involving further dispersal of my few R.A.F. squadrons in Middle East. I must confess that I was very relieved when it became clear that Turkey did not propose to join us unless her own territory was invaded. In my opinion the Turks were of more value to us as neutrals on that vulnerable flank barring the way to Palestine, the Suez Canal and Persian Gulf than they would have been as Allies clamouring for equipment from Middle East which was insufficient to meet even our own commitments in the existing theatres of operations.

The offensive in Libya was still going well and on the 30th Derna fell to the Australian forces whilst Mechili farther to the south had been occupied by the Armoured Division on the 27th. As in the case of Bardia and Tobruk, Derna had already been regularly and heavily bombed for some time and there was no need for a concentrated air attack immediately prior to the assault.

Cyrene was occupied on the 3rd February after which a rapid withdrawal of enemy forces took place. During this retreat the Blenheims, Hurricanes and Gladiators hammered away at M.T. convoys on the congested roads and made further attacks on Benina and Berka. However, it must be admitted that the scale of our air operations at this stage was somewhat reduced, due partly to unserviceability through many flying hours under desert conditions and also through our inability to establish airfields sufficiently rapidly to keep pace with the speed of the Armoured Division's advance. The over-ponderous standard squadron organization did not lend itself to such conditions and moreover we had very few transport aircraft left. The Blenheims and Wellingtons with their larger range were, of course, less affected and were able to continue their operations from airfields far back. The need was apparent for some unit, charged with the preparation, construction or repair and subsequently defence of airstrips for fighters, and that it should be up with the forward troops in the

advance. It was the first time during the war in which we had moved forward at such a pace.

The Australians now pushed on to Benghazi from the north, while on February 4th the Armoured Forces started their remarkable dash across the desert from Mechili to the coastal road south of Benghazi; the interception, which completely surprised the enemy, took place at Beda Fomm. The Italians supported by strong armoured car formations, tried to break through, but were repulsed with heavy losses and the greater part of their force was captured or destroyed.

As the Australians advanced on Benghazi, our medium and heavy bombers maintained their attacks on Berka and Benina airfields and on the railway station at Barce which was being used by the enemy for the withdrawal of his forces from that area.

Our troops occupied Benghazi on the 6th February, meeting little resistance in the final stages. When the R.A.F. took over Benina airport on the 10th February they found eighty-five unserviceable and damaged enemy aircraft and all the sheds had been wholly or partially wrecked. Our numerous bombing attacks on enemy airfields had paid a good dividend, particularly so in the case of El Adem, Gazala and Benina. No wonder the Italian air effort had dwindled to nothing in the final stages of the advance.

Following the British occupation of Benghazi, the remnants of the enemy forces retreated westward into Tripolitania, while the Italian Air Force was no longer capable of offering any serious threat for the time being. It looked as if it would be some time before the enemy would be able to stage an early counter-offensive in Libya. Meanwhile the increasing gravity of the situation in Greece was calling for the early despatch of further reinforcements to that theatre and the consequent reduction of squadrons in Cyrenaica. It was therefore with some relief to me that the decision was made not to continue the advance towards Tripoli. I was fairly sure that the Luftwaffe were arriving in Tripoli and would be playing havoc with our recently captured ports and lines of communication, which were quite long enough already.

My first move was to withdraw No. 274 Hurricane and No. 45 Blenheim Squadrons to start a reserve; these, together with Nos. 37 and 38 Wellington Squadrons, would make four squadrons, but where I was to get any more was still a problem. A mere trickle of aircraft was coming across on the Takoradi-Sudan reinforcement route and hardly any cased Hurricanes were now arriving by sea.

In Cairo there was great satisfaction at the Libyan victory, the Egyptians were delighted that the Italians had been pushed the best part of 300 miles from their frontier. Menzies, Prime Minister of Australia, had arrived with Shedden, Secretary of the Australian War Cabinet; they dined with me at Air House in company with Wavell, Bert Fish the American Minister, Colonel Donovan, and Channon, an M.P., both of them back from a visit to the Balkans. Tedder and our respective personal assistants, Arthur Curtis and Bray, completed the party. We listened to a broadcast by Winston and discussed the past, present and future. It was an interesting and stimulating evening and I doubt very much whether any of us could have possibly imagined that in less than ten weeks we would be evacuating Greece and be back to where we started in the Western Desert. On the other hand, and although Platt was making steady progress into Eritrea, we would hardly have expected the successful conclusion of the Abyssinian campaign and the occupation of Addis Ababa within the same period.

On the 11th February I flew out west to discuss with Maitland Wilson, now Military Governor of Cyrenaica, what was the minimum air force which should be left for the defence of the ports and occupying force. At El Adem I saw the wrecked hangars and aircraft and drove into Tobruk, an astounding sight with ships sunk or beached all over the harbour and parks of wrecked lorries alongside the road. I talked with the Senior Naval Officer of the inshore squadron who was in charge of the port and he spoke of the difficulty of dealing with the German parachute mines which had been dropped the night before.

I visited the rear headquarters of No. 202 Group installed in some luxury dug-outs recently occupied by an Italian headquarters. I stayed the night there after a good dinner with Italian wine. It was either here or with one of the squadrons that I had found two Italians in their sailor uniforms serving meals in the officers' mess and on enquiry was told that they had been borrowed from the prisoners' cage and went back there every now and then to report. They had both been waiters at some fashionable restaurant in London and knew their work thoroughly well. The C.O. said he also had Antonio, a Fiat expert, who attended to the big 10-ton Italian lorries which the squadron had appropriated to replace some of their own damaged transport. Antonio was much more concerned with the good reputation of his Fiat than he was in sabotaging our advance.

Next day I motored on to Gazala to see No. 73 Squadron

Squad.-Leader Murray and his pilots were in good heart but rather far away from Tobruk for effective air defence of that port. I saw more derelict S.79s, C.R.42s and Breda 88s. Then to Derna, of which I got a fine view from the top of the hill above; it looked an attractive little port with its white buildings and well-cultivated gardens. During the hundred-mile drive on to Barce we passed through quite pretty hilly country somewhat resembling southern Italy. Everywhere the same standard pattern little white houses with orchards and patches of cultivated ground, most of them now abandoned by the Italian colonists for fear of the marauding Arab who had some old scores to pay off. It was just as well Balbo was no longer alive to see the fate which had befallen his colony, for it cannot be denied that the country had been well developed.

At Barce a very comfortable hotel with all modern conveniences housed us for the night after a good dinner with Maitland Wilson at the officers' club. Barce is in the middle of a very fertile agricultural district and No. 208 Squadron was accommodated in buildings which the Italians had used as a depot for tractors and agricultural implements.

I arranged with the General for the reduction and redistribution of squadrons. Group-Captain L. O. Brown was to be in charge of H.Q. (R.A.F., Cyrenaica) at Barce; No. 3 Australian Squadron, now completely rearmed with Hurricanes, was to remain at Benina to provide the air defence of Benghazi; No. 73 Hurricane Squadron at Gazala was to move to Bu Amed for the defence of Tobruk, whilst No. 6 Army Co-operation Squadron with its mixture of Hurricanes and Lysanders was to replace 208 at Barce, keeping one flight with the forward troops at Agedabia.

Before flying back to Cairo I drove along the coast road to Benghazi. The town was much bigger than when I last saw it twelve years before and its normal population was now some 36,000 natives and 10,000 Italians, though most of the latter had disappeared. The Germans had given the harbour a bad bombing the previous night using parachute mines, some of which had not yet been located.

I lunched with General Dick O'Connor, Commander of the XIIIth Corps and the man really responsible for the dash and initiative displayed in this Libyan victory. He expressed deep appreciation of the work of the R.A.F. and showed me a copy of a special order of the day addressed by him to No. 202 Group, R.A.F. It read as follows:

I wish to record my very great appreciation of the wonderful work of the R.A.F. units under your command, whose determination and fine fighting qualities have made this campaign possible.

Since the war began you have consistently attacked without intermission an enemy air force between five and ten times your strength, dealing him blow after blow, until finally he was driven out of the sky, and out of Libya, leaving hundreds of derelict aircraft on his aerodromes.

In his recent retreat from Tobruk you gave his ground troops no rest, bombing their concentrations, and carrying out low-flying attacks on their M.T. columns. In addition to the above you have co-operated to the full in carrying out our many requests for special bombardments, reconnaissances, and protection against enemy air action, and I would like to say how much all this has contributed to our success.

It is my earnest hope that the XIIIth Corps will in future again have the co-operation of No. 202 Group.

This generous tribute to the work of Collishaw and his squadrons was much appreciated. We were all glad to think that the R.A.F. had made a valuable contribution to this Libyan victory which resulted in the capture of 180,000 Italians for a total British casualty list of under 3,000 of whom less than 610 were killed.

Before leaving Benina in my Lockheed I had time to inspect some of the 85 derelict Italian aircraft round the airfield and to congratulate No. 3 Australian Squadron on the part they had played in the complete defeat of the Italian Air Force. I warned them, however, that they might be kept very busy in protecting Benghazi from German air attack.

As I flew back the 600 miles to Cairo I wondered how long two fighter squadrons would suffice to protect the sea and land lines of communication. What with wrecks, a breached breakwater and parachute mines I thought the Navy were going to have some difficulty in using Benghazi for supplies and the alternative of Tobruk meant lorry convoys covering over 200 miles to Benghazi, plus a further 150 to our outposts at El Agheila.

During my three days' absence in Cyrenaica some interesting signals had arrived. The news from Greece was good, a brief spell of improved weather conditions had enabled our squadrons to afford most effective support to the Greek offensive in the Tepelene area. Alan Cunningham had launched his offensive from Kenya and had actually reached Kismayu on February 14th. He had met some opposition from Italian aircraft but the destruction of ten of them by South African squadrons in the first two days, in addition to bombing their airfields, went a long way towards establishing the complete air superiority eventually achieved. I

had been able to spare a few Hurricanes for the re-equipment of No. 3 South African Fighter Squadron in Kenya and for No. 1 S.A.A.F Squadron in the Sudan. Used with intelligent discrimination these few Hurricanes on the two East African fronts were of the greatest value as bogeys. Without them the old Wellesleys, J.U.86s, Hartebeestes, Battles and Lysanders could not have operated freely. The pilots of the Italian C.R.42s or S.79s were never quite sure when they were going to be pounced upon by the Hurricanes and were reluctant to interfere with our slow old machines in consequence.

On the 11th February a fresh directive from the Chiefs-of-Staff had arrived to the effect that the Defence Committee had decided that it was essential to place ourselves in a position to send the largest possible land and air forces from Africa in order to assist the Greeks against the probable German attack through Bulgaria. It was hoped that as soon as Kismayu was captured it would be possible to send a South African division to Egypt.

As a result of this, No. 33 Hurricane Squadron and No. 37 Wellington Squadron were despatched to Greece, but the two Blenheim squadrons withdrawn from Libya needed a refit and some rest after six weeks' intensive operations before they could be sent.

Signals continued to pass between Air Ministry and myself as regards equipment. In one of them it was proposed to allot sufficient Tomahawks to the Turks to equip and maintain two squadrons, and asked for my views. In another I was informed of 79 Blenheim IVs and 6 Glen Martins *en route* to Takoradi by sea and of a further 19 Blenheim IVs and 10 Glen Martins at Takoradi.

In my reply I referred to the claims of Malta for the best fighters that could be supplied and to the necessity of replacing the Gladiators in the two highly trained and efficient squadrons Nos. 80 and 112 before Greeks or Turks were provided with either Hurricanes or Tomahawks. Further, that fighter cover for the long sea convoy routes to Tobruk, Benghazi and Greece was required, and concluded by drawing attention to the fact that continued attacks by fighters from Dodecanese on Crete had necessitated a flight of No. 33 Fighter Squadron being sent to Maleme.

About this time (February 16th) Admiral Cunningham raised the question of a coastal group on the lines of Coastal Command at home, to be under the operational command of the Navy. He could see very plainly that R.A.F. commitments in Middle East,

present and planned, were so far in excess of our capacity to meet them that there was no alternative other than to ensure the definite earmarking of a proportion of R.A.F. squadrons for co-operation with him. He showed me a copy of a draft signal to Admiralty to this effect. If it really meant an addition to the present air strength in the Mediterranean I had no objection, as it was certainly not possible, at present, to meet all naval requirements in full, and it always remained a question of priorities as between conflicting claims. However, the arrangement proposed did not materialize during my period of command and it was left to No. 201 Group with its two Sunderland squadrons to work with the Navy on long sea reconnaissance and for No. 431 General Reconnaissance Flight with its 6 Glen Martins at Malta to watch the Italian and North African ports and traffic as far as they were able.

On the 16th February another signal arrived from the Chiefs-of-Staff asking whether an advance on Mogadiscio was practicable now that General Cunningham had reached Kismayu. The reply was in the affirmative and so there was no probability of denuding that front of troops or aircraft whilst the overwhelming initial success remained to be exploited.

On the 19th, Eden, now Secretary of State for Foreign Affairs, and General Dill, C.I.G.S., arrived in a Sunderland as representatives of the Defence Committee and on the following day I attended a conference with them and the two other Commanders-in-Chief. They had evidently been given a rather rosier picture of the air situation than I was prepared to accept but eventually I think they were convinced by the figures I showed them and a statement was accordingly included in the signal to the Prime Minister giving the result of our talks. Another conference the next day dealt with the degree of assistance possible to the Turks and once again it was clear that it was air of which we were short and that air would be the Turks' first and principal requirement. It was decided that a meeting with the Greeks was necessary to find out whether in the event of a German invasion from Bulgaria they proposed to defend their country, if so what measure of additional assistance, military and air, they needed and where should it be deployed.

On February 22nd our party consisting of Eden, Dill, Wavell, Heywood, two secretaries, three staff officers, Captain Dick representing Admiral Cunningham, and myself flew over in two Lockheeds to Athens. On the way we stopped to refuel at El Adem,

where Eden and Dill seemed rather impressed with the collection of Italian derelict aircraft lying around the airfield.

Both Dill and Wavell were superficially disguised as civilians in rather worn raincoats and ancient felt hats and, as we landed at Menidi airfield and pulled up on the far side away from the hangars, we were hustled into waiting cars and driven a mile or so to the King's country residence at Tatoi, where accommodation had been provided for all of us. We conferred till late that night with the King, Papagos, the Greek Commander-in-Chief, and Korysis the new Prime Minister who had taken the place of Metaxas when the latter died on January 29th.

The Greeks *did* intend to defend their country against a German invasion and they accepted the offer of three British divisions, an armoured brigade and such extra air squadrons as could operate from existing airfields as well as from those under construction. The landing and deployment of the force to be as inconspicuous as possible and as if the intention was to reinforce the Greeks in their Italian war. For this reason disembarkation at Salonika was ruled out and the expedition was to land at the ports of Piræus and Volos to take up positions north of Mount Olympus on the line of the Aliakmon River. Movement of some Greek forces from the existing Albanian front to positions on the British left flank was agreed and also the employment of the miscellaneous collection of Greek units in Macedonia in delaying the German advance.

We were now committed definitely to supporting the Greeks against the Germans and I came away from the conference with the conviction that, whatever transpired in the future, we were right in honouring our moral obligations to this brave little country to whatever extent was possible. We had systematically encouraged their spirit of resistance to aggression whether Italian or German and it will be left to historians to record whether, under the circumstances, we were right or whether we should have politely thanked them for what they had done in resisting the Italians, thus taking some of the load off us in North Africa, but that we must now leave them alone to do what they could to stem the impending German attack.

Next day the rest of our party flew back to Cairo but I remained to stay with Dalbiac at his very pleasant villa about 3 miles out of Athens and to visit the various R.A.F. units and see what progress had been made with the airfields. Menidi was unaffected by the winter rains and at Elefsis the long runway was nearly

completed. After some delay due to bad weather I set off on the 26th in a Blenheim with Dalbiac for Paramythia. Near Patras we passed over Araxos and Agrinnion, two of the new airfields under construction; water was lying on them and they did not look like being ready for some time. We landed about noon on the airfield called Paramythia (the valley of fairy tales) and our pilot had to keep the Blenheim moving to the parking-place to prevent his wheels sinking into the soft ground. Aircraft had to land up or down this valley with mountains on either side and more high ground on the third. It was gorgeous scenery but more pleasant to look at than fly around in. Here we found No. 211 Blenheim and No. 33 Hurricane Squadrons, the latter had recently arrived, much to the satisfaction of Gordon Finlayson, the C.O. of 211, and one of the most experienced squadron-leaders in Greece. His Benheims could now be escorted on their Valona raids and on our arrival they had all just returned from an attack on that port. Having waded through the mud to the mess tent for a lunch of bully beef and some vegetables purchased from the one and only local village at the head of the valley, I heard some of their stories.

Gordon Finlayson had had one of the engines of his Blenheim hit by flak over Valona and managed to crawl down the coast as far as Corfu where part of it fell out and he had to park down on the beach. Immediately surrounded by a menacing crowd of Greeks he tried to explain that he was a Britisher and not one of the Italians who had recently been bombing the defenceless island. At last, a friendly voice asked, "Say, are you guys Britishers?" and G.F. was relieved to make the acquaintance of a Greek recently back from the U.S.A. G.F. and his aircrew were then given a hearty welcome and taken into the town for lunch with the British Consul. During the meal the Italian air force arrived and blew all the windows in. He then fixed up with a fishing boat to sail him across to Patras, where he was fêted by the local mayor, given much brandy and later beer, after which he told us that he made a fine speech, to the assembled crowd from the steps of the Town Hall, not a word of which they could understand except for a reference to Mussolini, synchronized with an appropriate gesture of cutting his throat. Amidst loud applause he had boarded a taxi-cab and with his crew drove back to his squadron at that time on Menidi. He had been missing for about three days and, as is the way with the R.A.F., there was much rejoicing and celebration on his safe return.

Ryley, the C.O. of the Hurricanes, wasn't so pleased; his squadron hadn't seen a Wop all the morning. Were there really any of them in Albania? He need not have worried, for within the next two days No. 33 and the Gladiators of 80 and 112 Squadrons between them shot down seven Italian fighters over Valona and twenty-six more directly over the front line in full view of the Greeks. Only one Gladiator was lost, but the pilot escaped.

Living conditions at Paramythia tented camp were certainly primitive, and supplies arrived irregularly from a small port about 10 miles away along an extremely bad road; it was a three-day journey to Athens by a long roundabout route.

Paddy Coote, who had been one of my under-officers at Cranwell ten years before and was now the Wing-Commander of the four squadrons, drove us over the mountain road to Janina; the airfield was water-logged that afternoon and we were thus unable to fly over. For three hours we motored on an atrocious road through wild mountainous country and we were frequently inside cloud. We eventually arrived about six o'clock in the small town perched on a hill where the personnel of Nos. 80 and 112 Gladiator Squadrons were billeted. I enjoyed my evening with these two seasoned squadrons and heard many good stories of their exploits. In spite of cold, wet, mud and cloud-covered mountains they seemed to prefer their life here to the sand of the Western Desert.

The Advanced G.H.Q. of the Greek Army was at Janina, but the General and his Chief-of-Staff were back in Athens at a conference. One of his staff explained the military situation from which it seemed to me that the Greeks were unlikely to reach Valona, but thank goodness they could not say it was through lack of R.A.F. support, for I heard nothing but praise for the help our squadrons had given them.

Next morning I paid a visit to the very damp-looking airfield outside Janina where the Gladiators of the two squadrons were dispersed; some of them were just taking off and looked like speedboats with a feather of spray behind them.

We motored back to Paramythia over the mountains and through the clouds passing all sorts of peasants on the road, some driving pack ponies or sheep along and others laboriously mending the most indifferent road surface. We passed through some pretty oak country with snow-capped peaks in the distance and over some temporary bridges with muddy brown swollen streams below.

I said goodbye to Paddy Coote, and it was to be the last time I was to see him, for he was shot down in a Blenheim leading a

formation over the Monastir Gap trying to stem the German advance a few weeks later.

From Paramythia my Blenheim took off down-wind carefully avoiding a bogged Wellington that had forced landed and sunk in up to its axles. On the flight back we passed through some very thick low cloud at the entrance to the Gulf of Patras. My two-day trip to these advanced airfields had given me a good idea of the difficulties and hazards of weather in which our aircrews were operating, they were putting up a remarkable show but it was obvious that without transport aircraft we could not maintain more squadrons at these inaccessible airfields than we had already got there. In this particular case it was quality in personnel we needed and thank goodness we had got it.

Back in Athens we heard news of the Germans, in uniform, having arrived in Varna, a Bulgarian Black Sea port; so now it could only be a question of time before they would attack across the frontier. Bulgaria had just signed the Axis Three-Power Pact. I also heard that Eden and Dill had gone to Turkey and were expected in Athens by Sunderland flying-boat shortly. I had another meeting with the King and Papagos at which I gave an account of my trip north and made some proposals as to the re-equipment of the Greek squadrons. I had been warned by an Air Ministry signal to use caution in my promises to the Greeks as regards Tomahawk deliveries as these aircraft were deficient of certain items and not modified. I don't remember promising them very much but they were pleased at our air successes against the Italians; the score for three days had now gone up to forty, and all destroyed in the air.

Eden and Dill arrived from Ankara on the 2nd March but there was no fresh news and the Turks were not going to play. Some points outstanding from the Tatoi conference of the previous week were cleared up. They mainly concerned the rôle of certain Greek forces in Macedonia when the German attack developed. I left next morning for Cairo by Sunderland and found the usual accumulation of paper work in my office and faced again the ever-present problem of finding sufficient aircraft to keep the squadrons flying on five active fronts: Malta, Cyrenaica, Eritrea, Italian Somaliland and Albania.

Briefly the situation on these fronts was now as follows:

At Malta, Maynard's No. 261 Hurricane Squadron was putting up a very spirited defence against continued German attacks and they were being supplied with Hurricanes sufficient to maintain

wastage. No. 228 Squadron's flying-boats were too vulnerable at their Calafra moorings and I withdrew them again to Alexandria from where they could still carry on their long sea reconnaissances of the Ionian Sea and Eastern Mediterranean, using Suda Bay when necessary. No. 148(B) Wellington Squadron also moved to Egypt to avoid congestion on the airfields and make more room for the reinforcing flights using Malta as a staging-post. It was still found possible to operate Wellingtons on passage for attacks on Tripoli and various Italian ports hitherto dealt with by 148. The Glen Martins of No. 431 G.R. Flight, of which there were seldom more than three serviceable, continued their enemy port reconnaissances, and at one time had the very valuable assistance of a P.R.U. (Photographic Reconnaissance Unit) Spitfire which was a visitor to Malta on special work.

In Cyrenaica the Luftwaffe were increasing their activities not only against the ports of Benghazi and Tobruk but also against our occupying forces. They were using J.U. 87s, 88s and now M.E. 110s and 109s were making their appearance, operating from forward landing-grounds. The Hurricanes of No. 3 Australian and of No. 73 were having plenty of work. Reconnaissances of Tripoli revealed a considerable increase in the quantity of shipping and it soon became evident that reinforcements were pouring into Tripoli both by sea and in J.U. 52s. Early in March it was estimated that there was the best part of a German division there already. It was rather a sinister outlook since we were now heavily committed as regards land forces to Greece.

Based on the new Canal airfields of Shallufa and Kabrit the Wellingtons of Nos. 37, 38, 70 and 148 Squadrons under Group-Captain McClean of No. 257 Wing were operating continuously. Objectives included: airfields in the Dodecanese to reduce the scale of German air attack on the Suez Canal, Adriatic ports via Menidi as an advance base, and Tripoli using one or other of the airfields in Cyrenaica for refuelling. They were all doing splendid work but I must confess that for the type of war with which we were about to be faced I would gladly have exchanged these night bombers for their equivalent in modern fighters plus another squadron of transport aircraft. No doubt they were most excellent types for the strategic bombing of Germany from the well-prepared bases in England but their maintenance, bomb-loading and refuelling problems under existing conditions in Middle East were certainly a handicap to getting full value from them.

In Eritrea, Platt had advanced as far as the approaches

to Keren but was for the time being held up there. Slatter's two Wellesley squadrons Nos. 47 and 223, No. 14 Blenheim IVs, No. 237 Rhodesia Lysanders, No. 1 S.A.A.F. with Hurricanes and K Flight of Gladiators were giving him all the support he needed. The bombers had already begun their softening up attacks on Keren and the Italian Air Force, or what was left of it, seldom appeared. Haile Selassie had entered his country on the 15th January and with his patriot forces was now approaching Gondar. Vincents from No. 1430 Flight were keeping in touch with him and the bombers made occasional attacks on Italian strong-points in front of his Abyssinians as a diversion from their offensive in support of the advance farther north.

In Italian Somaliland, Cunningham was already 80 miles on from Mogadishu and his total of prisoners had reached nearly 10,000. He had picked up petrol and other supplies left by the Italians and Sowrey's South African squadrons were keeping the skies clear and harassing the enemy's rapid withdrawal. Reid's Blenheims from Aden were also participating effectively whilst still maintaining their watch on the Red Sea lines of communication and escorts to convoys. Repeated raids were being made on Assab, Alomata and Diredawa. Besides damage to buildings, depots and repair shops a number of aircraft were destroyed on the ground, eight of them at Alomata in one raid by two Blenheims. Berbera was recaptured on March 16th, and enabled the very useful landing-ground there to be used once again.

The offensive against Italian East Africa was indeed going well. The question was when could we expect the complete collapse of Italian resistance and the release of all the forces, land and air, which were now occupied in this final phase? I was already being pressed from home to release certain units but the Italian Air Force was not yet quite dead and there were still some destroyers at Massawa. The aircraft which I was most anxious to move north were the few Hurricanes with Nos. 1 and 3 S.A.A.F. Squadrons and these were the very machines which were responsible for the comparative immunity of our troops from air attack. Keren was still proving a tough proposition and intensive bombing was called for. It might have prolonged Italian resistance if either Platt or Cunningham had been suddenly deprived of any of the air support they were getting, and here was a campaign where victory would be permanent and final.

STORMY WEATHER

ABOUT the middle of March the burning question was whether Jugo-Slavia could still be persuaded to join the Greeks and ourselves in resisting further enemy penetration into the Balkans. The Germans were now blatantly in Bulgaria and it was only a question of days before they launched their offensive. The Jugo-Slavs offered to send an officer to some selected spot for staff talks, an offer which was accepted with alacrity, but on the 25th March their Regent and Ministers signed a Pact with Germany and it looked as if they were going the same way as Rumania and Bulgaria. However, two days later, a *coup d'état* by the military led to a refusal by them to recognize the Pact and to the arrest of the Regent, Prince Paul, and his Ministers. This all seemed more hopeful; at least there would be some resistance to the passage of German forces through Jugo-Slavia.

On the 19th March the Governor of Malta in a personal signal to me asked for another fighter squadron temporarily whilst the convoy ships were unloading, but it was out of the question, we were stretched to the utmost limit. Everyone, particularly the Greeks, were shouting for Hurricanes. On the basis of replacement of wastage in existing squadrons, re-equipment of those with obsolete types, formation of new squadrons already authorized and of implementing our promises to Greeks and Turks the estimate of our deficiency in aircraft was no less than 450. Between the 1st January and 15th March (1941) the figures for aircraft which actually reached Egypt or the Sudan by the various routes were as follows: 12 Wellingtons, 68 Blenheims, 7 Glen Martins, 70 Hurricanes, 12 Fulmars (for the Fleet Air Arm) and 3 Lockheed Lodestars. This rate of reinforcements was out of step with our actual commitments and was partially due to delays and losses *en route*. For instance, the sand-laden Harmattan wind on the Takoradi air route, which blew during the months of December, January and February, not only held machines up but necessitated complete overhaul of some of their engines on arrival in Egypt. It seemed to me difficult to convince those at home of the exact state of affairs; however, the rate of supply did improve during April and by June my successor was getting an ever-increasing flow.

On the 25th a German armoured force drove our outposts out of Agheila and gave every indication of exploiting their initial success. The following day the cruiser *York* was torpedoed in Suda Bay by an aircraft from the Dodecanese. This was all very depressing but on the other hand it was encouraging that Keren in Eritrea was captured on the 27th after very stiff resistance, and on the following day we heard the good news of Admiral Cunningham's success against the Italian Fleet off Cape Matapan.

The part which the R.A.F. played in this action is not widely known, but it was a Sunderland which on March 28th reported the position of the Italian cruisers and destroyers. Acting immediately on this information, Dalbiac despatched a force of Blenheims from Greece which, in twenty-four sorties, reported direct hits with 500-pound semi-armour-piercing bombs on two cruisers and one destroyer. The Admiralty subsequently expressed their great appreciation of the most welcome and invaluable co-operation of the R.A.F. with the Mediterranean Fleet, south and west of Crete. They considered the manner in which the R.A.F. squadrons found the enemy and bombed them deserved high praise, and their success no doubt had a great effect on the Italian morale generally. This acknowledgement of our successful co-operation was much appreciated, particularly at a time when the future in Libya, Greece and Malta was not looking very bright.

During March the landing of Imperial Forces in the Athens area had proceeded without incident, and with the prospect of having to operate on two fronts, in support of the Greeks in Albania west of the Pindus Mountains, and also of our own forces in the east on the Aliakmon line, Dalbiac organized his squadrons into two wings. The Eastern Wing in the Larissa area under Gordon Finlayson consisted of Nos. 11 and 113 Blenheim Squadrons and Nos. 33 and 208 Squadrons, Hurricanes and Lysanders. The Western Wing under Coote had its headquarters at Janina with No. 112 Gladiator Squadron and No. 211 Blenheim Squadron. In the Athens area Nos. 30 and 84 Blenheim Squadrons, No. 80 Squadron with a mixture of Hurricanes and Gladiators, and detachments of Nos. 37 and 38 Wellington Squadrons were retained directly under the orders of Air Headquarters.

April of 1941 was certainly the most eventful month of my period in command of the R.A.F. Middle East. On the first day of the month the cheering news came that Asmara had been captured. General de Gaulle arrived in Cairo by Sunderland and

with him General Spears. We hoped he would have some influence in preventing Vichy-dictated collaboration in Syria with the Germans and Italians.

On the 2nd, Admiral Cunningham arrived in Cairo for the Commanders-in-Chief conference on his return from the Matapan victory. In Cyrenaica our advanced outposts were falling back from Agheila under German armoured pressure. On the 3rd, I left Tedder in charge and flew down to Khartoum in a B.O.A.C. flying-boat to discuss future plans for the R.A.F. in the Sudan, Eritrea and Ethiopia and to arrange for the withdrawal of as many air units as could possibly be spared for reinforcement to Libya and Greece.

April 4th was for me a long and interesting day. At an early hour I flew to Kassala and visited No. 1 South African Air Force Fighter Squadron and congratulated the pilots who had done so very well with less than a dozen Hurricanes. Kassala is a dry and dusty spot with a high rock sticking straight out of the desert, dominating the small town and the River Gash, at that time bone dry. Thence to Agordat, in Eritrea, where I saw No. 47 Wellesleys and No. 237 Rhodesian Lysander Squadrons and talked with the aircrews, all very seasoned veterans by this time and good at making the most of Agordat's amenities which were certainly better than those of Kassala.

Afterwards I flew on to Asmara, passing over Keren, where Platt's two Indian divisions, the Fourth and Fifth, had had such a fight to take the strongly defended fortress position. I landed on the airfield at Asmara, with the altimeter registering 6,500 feet, in the cool of the evening. The hangars, workshops and barracks were damaged as a result of our bombing, but the town itself was intact, except for the railway station, which had also suffered.

The Italians had made a very pleasant health resort of Asmara. There were gardens, boulevards, cinemas, well-built offices, shops and houses, and the hotel at which I stayed was clean and in full working order except for food, which we had to provide. The manager met me at the door, welcomed me in good English, asked after London, where he had been for many years, and showed me up to a suite of rooms, even hot water was laid on. Seeing the electric lights full on I enquired if the power station had not been damaged. "Oh," he replied, "half the supply comes from Massawa." As the latter port had not yet been captured I thought it was peculiar and after dinner half the lights went out. I said, "I suppose Massawa have discovered their mistake."—"Yes," he

replied, "but the Chief Engineer has telephoned through and told them to switch the supply on again." He was quite right, and the lights came on shortly afterwards.

I visited Platt, who was arranging for the occupation of Asmara with the minimum number of troops, before pressing on to the south after first capturing Massawa. I mentioned to him the fact that I had noticed Italian policemen still on point duty in the town and going about their work as if nothing much had happened. He said, "Oh yes, they've got their carbines too and a few rounds of ammunition, but they've been told not to use them, anyway I can't waste my own men on the job." He was perfectly right, to remove their weapons would have degraded them in the eyes of the natives, and they could be relied upon to do their work conscientiously and without thought of hindering the progress of our troops.

On the morning of the 5th, Drummond from my headquarters in Cairo signalled bad news of German successes in Cyrenaica, our troops were coming back fast from Benghazi. I flew straight back the 500 miles from Asmara to Khartoum and presided over a conference of my local A.O.C.s to decide what aircraft and units could now be withdrawn. Reid had flown direct across Abyssinia to Khartoum from Aden, the first occasion on which this had been done; his pilot was Group-Captain Ginger Barrett probably one of the most experienced desert flyers in the R.A.F.—Sowrey had flown from Nairobi—Slatter was already on the spot. As a result it was decided to reduce the squadrons in the Sudan to two, No. 47 with Wellesleys and No. 237 with Lysanders were to be left. The remainder were to move north with what aircraft were left. Kenya yielded two S.A.A.F. Squadrons, but those with the obsolete types such as Battles, J.U.86s, Ansons and Hartebeestes were to remain to assist in the mopping up operations which would still take time. Aden was reduced to a few Vincents.

News arrived in the evening that Imperial Forces had entered Addis Ababa and that Aosta with his few remaining troops and aircraft had withdrawn to the south-west.

On April 6th I flew back to Cairo and arrived about lunch-time to be greeted with the news that the Germans had invaded Jugo-Slavia and Greece that very morning and also that enemy progress in Cyrenaica was gaining momentum. Trouble in Iraq seemed to be brewing as well, so the whole outlook was depressing and our successes in Italian East Africa were entirely overshadowed.

Signals and directives from home now became rather confusing. On the 4th one of these had given Cyrenaica absolute priority but on the evening of the 6th it was changed to maximum possible support to ground forces in Balkans and minimum necessary to secure western flank in Egypt. It seemed to me that the serious threat to Egypt from the enemy's rapid advance in Cyrenaica was not fully appreciated. I felt that the first essential was to ensure the safety of service bases in Egypt by stemming enemy penetration at a point as far west as possible. It was quite likely that originally the Germans did not intend really large-scale operations but that his early successes were encouraging Rommel to exploit them to the full extent.

A rather subdued C.s-in-C. conference in the afternoon attended by Eden and Dill discussed the question of priorities and what we should hold. The Admiral and I were most anxious to keep some depth for the air defence of Alexandria thus giving at least some cover to convoys both coastal and to Malta. We both hoped that Tobruk could be held. The operation for taking the Dodecanese would have to wait.

That night Dalbiac sent some of his Wellingtons in Greece to bomb Sofia railway station.

On April 7th reports from the Libyan front showed that our forces were now back in the Tobruk area but that the position of the Armoured Brigade was not yet clear. It transpired that most of them had been overrun near Mekili, there had been some mistake in blowing a fuel dump prematurely, and that further north Generals O'Connor and Neame together with Brigadier Coombe had been captured by a German patrol. Tedder had a narrow escape when his engine failed over Mekili, but a passing Blenheim picked him up and brought him to Cairo. That evening he described to Wavell and myself the situation as far as he knew it. Our temporary occupation of the important airfield at El Adem had ended, but No. 73 Hurricane Squadron was still functioning from a Tobruk landing-ground within the perimeter defences. The remainder of the R.A.F. were being withdrawn to the Mersa Matruh area except for five unserviceable Hurricanes and a similar number of Blenheims which had to be burnt.

April 8th brought news of rapid German progress in Jugoslavia, where the Southern Army had been forced to withdraw, exposing our left flank in Greece. Salonika was now also threatened. Dalbiac signalled that his Blenheims were attacking the German lines of advance and that his Hurricanes were taking toll

of the Luftwaffe, which had appeared in considerable force. He also referred to the unexpected lack of resistance by the Jugo-Slav Southern Army which was likely to prove a serious factor.

It was clear from now on that we were going to have difficulty in hanging on to Greece in face of the overwhelming force of this latest German enterprise. Once again I was struck by the enormous advantage to the enemy of his interior lines of communication, which in this particular case involved no sea transport. He had already had so much experience in staging such offensives on the grand scale, and he seemed to have solved the problem of rapidly preparing airfields so that his short-range aircraft were able to operate in support of his forward troops.

The capture of Massawa passed almost unnoticed in the general distraction caused by events further north, even though in its final stages it involved the destruction of four Italian destroyers and a submarine by the Navy and R.A.F. combined.

On the 9th April Wavell returned from a night out in the desert near Sollum where his Lockheed had been forced to make a belly-landing though fortunately without damage to passengers or crew. Cunningham flew up from Alexandria for another long conference on Libya and Greece; we were relieved to hear from Wavell that every effort was to be made to hold Tobruk.

Next day, the 10th, the Germans in their drive through Jugo-Slavia reached Monastir and Yannitsa after overwhelming the Jugo-Slav Army and joining up with the Italians. The Greeks were thus compelled to withdraw from the northern front of Albania while our Armoured Brigade and an Australian Infantry Brigade were moved westwards to close the Florina Gap which is where the Greeks should already have been as originally arranged. Our Blenheims continued to hammer away on the enemy M.T. columns, but still they kept coming on.

In Iraq, Raschid Ali chose this particular moment to add to our problems by his *coup d'état*, removing the Regent and giving high appointments to four generals who were known to be in German pay and were usually referred to as the "Golden Four." However, India was already in communication with the Chiefs-of-Staff about sending a brigade to Basra forthwith, and Smart at Habbaniyah had his training aircraft converted for operations. These together with some old Vincents could probably take care of the Iraq Air Forces, though it was possible that the Germans might fly over some M.E.110s if they could refuel in Syria. Two or three did actually get through.

On the 11th I flew to Athens in a Sunderland with Wavell. The news was not good, we were falling back from the Florina Gap and there was talk of the possibility of moving the Greek Government to Crete or Cyprus.

I talked over plans with Dalbiac in the event of evacuation becoming unavoidable, but made it clear that we must fight on so long as the Greeks continued to do so. The squadrons were doing magnificently, but one or two were getting very tired, they had had no respite for six months or more.

Piræus docks were in a dreadful state due to the explosion of an ammunition ship as the result of a mine. German and Italian aircraft again appeared that night and about 150 of them dropped bombs and mines on Piræus and Salamis.

Next day, the 12th, I flew up to Larissa to see Grigson and the Eastern Wing squadrons. The Germans as yet did not owe their rapid advance to the Luftwaffe, and our squadrons were still taking toll both in the air and against ground targets. I met Maitland Wilson who had come to see Wavell off back to Athens. He was as usual quite unmoved by the unpleasant outlook ahead and had already withdrawn his division to the Mount Olympus line.

As I took off from Larissa I somehow felt it was to be the last time I saw that airfield, in fact it seemed to me that it was only a question of time before we should be driven back to the boats and have to rely on the Navy once again to do what they could with whatever air support the R.A.F. could muster. Unlike Dunkirk, there were no home airfields within 50 miles from which such fighters as remained could operate over the embarkation ports or beaches.

That evening I had another interview with the King. He was as stout-hearted as ever, grateful that we had supported him so well in the air, and determined that whatever might happen he would keep some Greek organization to remain in the war.

On Sunday the 13th April I returned to Cairo with Wavell after our Sunderland had to take off at Scaramanda from water where mines were known to have been dropped the night before. We speculated as to the effect of a metal flying-boat passing over a magnetic mine at high speed during the take-off, but nothing happened. We had only left one depressing theatre of operations to return to another, for the Germans had now reached Sollum and Capuzzo, moreover Tobruk itself was totally invested. Malta was also in trouble and was being heavily plastered.

The 14th April was a cold and cheerless day which our C.s-in-C.

conference did little to brighten. The problem of holding the Germans in Greece and Libya, of sustaining Malta, and of forestalling the probable trouble in Iraq without losing more than we were receiving in reinforcements and supplies was never more complicated than at this time. However, it was on this day that I received from the Air Ministry a signal transmitting a resolution adopted by the House of Commons on April 9th in the following terms:

That this House on the occasion of the recent victories by sea, land and air in North Africa, Greece and Mediterranean records with gratitude its high appreciation of the service of all ranks of His Majesty's Forces in these brilliant operations, and also of those who by their labour and fortitude at HQ., M.E., have furnished the means which made these successes possible.

The Secretary of State for Air added his best wishes to the R.A.F.

That evening I met General de Gaulle at a dinner given at Shepherd's Hotel on his arrival from England to stimulate the Free French movement in Africa, now beginning to gain strength; so far it had not made much progress in Syria, where General Dentz gave it no support nor did the French Admiral Godfrey make any move to place his ships at Cunningham's disposal. A day or so afterwards General de Gaulle lunched at Air House and I had the opportunity of getting to know something of this tall sombre leader who had risked his neck for his faith in the future of his beloved France. How could a sense of humour or any compromise be expected from one who so obviously considered himself a modern Joan of Arc?

On the 15th the news from Greece was bad, we were withdrawing from the Mount Olympus line in the face of strong enemy pressure, and the nightly bombing attacks of our Wellingtons of Nos. 37 and 38 Squadrons on rear lines of communication seemed to be having little effect; nor were the Blenheims and Hurricanes in sufficient strength to make any appreciable difference during the day to the steady advance of the Germans.

On the other hand, Tobruk on the previous day had withstood a strong German-Italian attack, during which No. 73 Hurricane Squadron, still operating from the airfield within the perimeter, had shot down nine enemy aircraft for the loss of two, and had also dealt with four J.U.52s full of troops.

Another encouraging signal came from the Prime Minister: "All your vigorous reactions give us greatest pleasure here. Compliment squadrons in Tobruk for clawing down dive bombers." The message went on to say that the stream of rein-

from Raschid Ali and further that Smart had considerable aircraft that could be used at a pinch. I therefore cancelled the move of the Wellingtons but sent the 6 Gladiators, as Smart had only his training aircraft and the situation was hourly becoming more threatening. From this time onwards suggestions from home as to the deployment and operations of my air forces could hardly keep pace with the rapidly changing situations.

During the next five days the situation in Greece deteriorated rapidly. Our land forces had fallen back to the Thermopylæ position on the 15th which had necessitated all R.A.F. squadrons being withdrawn to the Athens area. Continuous enemy air attacks on our airfields had considerably reduced the effective striking power of Dalbiac's remaining Blenheims; at Niamata we lost 10 Blenheims burnt out and several other aircraft which had to be destroyed and abandoned. On the 18th the Greek Prime Minister Korysis committed suicide and on the following day the Greek forces in Epirus capitulated. On the 21st the Greek Government handed a note to the British Minister stating their inability to resist further and asking that the imperial forces should be withdrawn.

On the 22nd (April 1941) our evacuation began, and on that morning I flew over to Suda Bay in a Sunderland where Wing-Commander George Beamish was in command of all R.A.F. units. He seemed to have an excellent grasp of the situation and had already organized a transit camp for the R.A.F. key personnel now being flown over from Greece by Sunderlands for onward passage to Egypt. In addition to No. 805 F.A.A. Squadron with a mixture of Fulmars, Gladiators and Brewsters, No. 30 with its long-range Blenheim fighters was working from Maleme on air escort to convoys, later they were joined by a few Blenheims from No. 203 Squadron.

In Greece the fighter squadrons had put up a magnificent performance. On the 19th and 20th Nos. 33 and 80 Hurricane Squadrons had destroyed a total of 29 German aircraft and probably another 15, for the loss of 7 Hurricanes.

Early on the 23rd I met the King of Greece, our Minister, Sir Michael Palairt, and General Sir Tom Blamey, as they landed from a Sunderland at Suda Bay. The remainder of the Greek Government arrived in Crete later that day. The King hoped to remain with his Government on Greek territory, but I was rather alarmed to hear that he intended making his headquarters at the east end of Crete within very easy range of enemy aircraft now

very active from the Dodecanese, not to mention the danger of an enemy raiding party, air or seaborne. I thought the Suda Bay area might be more healthy for the time being and less of a defence commitment for our few fighters.

He talked of the overwhelming German offensive which had led to the capitulation of his army, and left me with the impression that he fully realized how, on sea, land and in the air we had honoured our moral obligation to assist as far as was possible with our limited resources the resistance of his people and army to two major aggressors. He was undoubtedly grateful for the R.A.F. contribution.

Later that morning I drove by ~~the~~ along the road to Candia and Heraklion, stopping for lunch at Retimo where I examined the small airstrip. It seemed to me that in this hilly island there was scope for a prolonged defence by a force of say 25,000 men if they could be supplied, but that the existing airfields had little capacity for wide dispersal and thus aircraft losses on the ground from attack by enemy aircraft using airfields on the Greek mainland and in the Dodecanese would be a most serious consideration. It looked as if we might lose more aircraft than we could afford at the existing rate of supply from home. However, the pre-occupation of the moment was to cover the Navy in their difficult and hazardous task of transporting the Army away from Greece. At Heraklion I found about 14 Gladiators of No. 112 Squadron operating for the defence of the convoys approaching Crete. I flew back to Maleme, taking a look at Padiadi on the way, it was certainly not going to be ready for another month.

Next day, the 24th, Dalbiac reported that all but six of the Hurricanes of Nos. 33 and 80 Squadrons had been destroyed at Argos by enemy aircraft. Later I joined a party of evacuated sergeants in a Sunderland and flew back to Alexandria in company with another Sunderland and an Empire flying-boat full of skilled R.A.F. personnel. Admiral Cunningham gave me lunch in his flagship, and as usual he was cheerful in spite of his enormous responsibilities now involved in the Greek evacuation. He was particularly pleased at the success of some of his light forces which had sunk 5 supply ships and 3 destroyers out of a convoy bound for Tripoli and a few days later had actually bombarded Tripoli. Blamey was also lunching on board and he was very grim on the subject of the German dive-bombers in Greece and on the chances of getting his Australians away.

That afternoon back at my headquarters in Cairo reports from

the Western Desert showed that only 21 serviceable Hurricanes remained to Nos. 73 and 274 Squadrons and that owing to the very exposed position of No. 73 within the perimeter at Tobruk we were losing too many aircraft. Not only were our machines under machine-gun fire as well as A.A. immediately after taking off or during the approach to land but on several occasions they were faced with having to deal with large enemy formations involving 100 bombers escorted by upwards of 150 fighters. During the 22nd and 23rd No. 73 had destroyed 12 German aircraft and probably 2 more for the loss of 3 of their own, but this could not go on indefinitely, so I decided to withdraw them to Mersa Matruh, from where they could operate on offensive sweeps over Tobruk in company with No. 274 Squadron.

The Takoradi reinforcing route now began to provide us with Tomahawk fighters, 12 of them were in Egypt, 17 *en route* and another 145 were at Takoradi. It was most disappointing that they were suffering from teething troubles, both engine and armament, which prevented their immediate allotment to fighter squadrons for operations. However, a few more Hurricanes came across the route to just keep us going. On the 28th April the total number of serviceable Hurricanes available in Middle East excluding Malta was under 50.

The Prime Minister signalled that he had no doubt that maximum possible air support would be given to imperial troops in Greece during the next few critical days so far as this could be done without prejudice to the security of the decisive theatre Egypt. I was glad to get confirmation that the decisive theatre was still regarded as being Egypt.

During the next four or five days the evacuation from Greece by sea, and to a limited extent, by air went on in spite of losses. The New Zealanders and Australians were doing magnificently holding successive lines covering Athens and the Piræus. On the 26th German paratroops dropped near Corinth captured the town and bridge across the canal, which increased the difficulties of covering the embarkation.

By the 30th April the R.A.F. evacuation was complete, and two days later the figure for all imperial troops rose to over 43,000 safely evacuated out of a total force of 60,000.

The flying-boats of No. 230 Squadron under Wing-Commander Francis played a large part in this successful operation. Assisted by Sunderlands of No. 228 Squadron they carried no less than 600 from Greece to Crete, and with the help of Bombays and

of B.O.A.C. Empire flying-boats they moved over 850 from Crete to Egypt. The last Sunderland from Greece staggered off the water at Scaramanda under fire with over 80 persons on board. Some of the R.A.F. navigated launches from the mainland back as far as Crete, others sailed over in small boats from Kythera. Very few of them got left behind.

During the six months' campaign in Greece the R.A.F. lost 209 aircraft, of which 82 had to be destroyed and abandoned during our withdrawal. Losses in actual combat amounted to 72. As a comparison, the losses inflicted on the enemy totalled 259 destroyed and 99 probables. This brought the total of enemy aircraft destroyed on all fronts between January 1st 1941 and April 30th 1941 to 858 confirmed and 160 unconfirmed. The comparative figure for our own losses during the same period was 345. In Greece we lost 148 killed and missing, and 15 prisoners; of these 130 were aircrews. The R.A.F. had indeed done magnificently, and their efforts were appreciated by General Wavell who wrote to me on May 1st in the following terms:

On behalf of the Army I should like to thank you for the great effort made by the Royal Air Force in Greece to support the Army in spite of the enemy's overwhelming superiority. The gallantry and skill of the Royal Air Force in accomplishing so much against such numbers and in fighting to the end whatever the odds against them has won the admiration of all who were in Greece.

It was a fine tribute deeply appreciated by those concerned.

In Libya the German and Italian advance had reached a forward line on the Egyptian frontier between Halfaya and Sidi Omar by the 28th (April), but they made no further attempt to come farther east. On the 30th a determined attack was made on Tobruk, in which over 60 tanks, infantry and dive-bombers were employed. Though the outer perimeter was pierced the main defences held, and after a further attack on the 2nd May had been repulsed the enemy effort seemed to be temporarily spent.

Between the 1st April and the 3rd May the three Hurricane Squadrons, Nos. 73, 274 and No. 3 Australian, had between them destroyed 73 enemy aircraft in combat and probably another 16, with a total loss of 22 Hurricanes. The Blenheims and Heavies made over 550 sorties against enemy M.T. convoys, airfields and port of Benghazi. No. 39 with its Glen Martins had continued their long strategical reconnaissances for both Navy and Army.

It would be true to say that the German-Italian success in regaining Cyrenaica was due more to the number, efficiency and

mobility of their ground forces than as a result of their numerical air superiority. At no time did the German-Italian Air Forces completely dominate the situation on this front. Collishaw and his squadrons had done a fine job of work.

As I anticipated, the news of our evacuation from Greece had its repercussions in Iraq. Whereas on the 18th April Raschid Ali made no move to oppose the landing of our forces from India at Basra nor their onward passage, it was a different story on the 29th, when permission for the landing of the second contingent was refused and at the same time Iraq troops began the investment of Habbaniyeh. It was the moment to send the Wellingtons over to be ready for further events, and eighteen of them were despatched to Shaibah.

On the 30th I received instructions to return as soon as possible to England in accordance with the wishes of the Prime Minister for discussion on all aspects of future air operations. Air Marshal Tedder was to be appointed acting A.O.C.-in-C. and Air Vice-Marshall Drummond his Deputy. I suggested I should postpone my return until the new developments in Iraq had been dealt with, but an ominous reply came back that I should return as arranged.

On the 2nd May the Iraqi Forces attacked Habbaniyeh and were promptly bombed by Smart's training aircraft and by the Wellingtons. At the same time our troops from India occupied Basra. That afternoon a signal arrived from Air Ministry which, in contrast to their previous one of the 16th, showed anxiety as to developments at Habbaniyeh. It was at this stage, on the 3rd May, that I had reluctantly to start my flight home, leaving Tedder in charge of a not very promising situation. I was not to know till some weeks later that my time as A.O.C.-in-C. Middle East had ended, and that I should be denied the opportunity of personally saying farewell to the Ambassador, to the two great commanders with whom it had been my privilege to share the triumphs and anxieties of those strenuous months and to the officers and men of the R.A.F. who had served me so well.

The flight home was interesting; unescorted flying-boats had to time their arrival at Malta so that the last hour in the air was done at night in order to avoid interception by German fighters. My Sunderland approached the island about 11 p.m. and found a big raid in progress which prevented the flare-path floats in Calafra bay being lit. We watched the fireworks for about an hour before permission was given for us to land. A motor-boat

took us ashore, whilst the Sunderland was being refuelled, a tricky business carried out with the minimum of lighting. Maynard came to meet me and told me that in the past few days No. 261 Hurricane Squadron had destroyed 9 enemy aircraft and probably 6 more for the loss of 6. The number of aircraft in this squadron had now been considerably increased partly by reinforcement from Middle East before Rommel's recent offensive had driven our forces back to the Egyptian frontier and partly as a result of operations by aircraft carriers from the Western Mediterranean, in which the Hurricanes were flown off from a position west of the Sicilian channel. Pilots had been double banked to cope with the increased raids and larger number of enemy aircraft taking part. This squadron was in action almost every day and on many nights. A second Hurricane squadron was about to be formed and No. 21 Blenheim Squadron had just arrived from England. This unit had specialized in low bombing attacks on shipping and had already scored successes against an enemy destroyer and merchant ship off the Tunisian coast.

Glen Martins of No. 431 General Reconnaissance Flight were keeping up their regular watch on Italian ports, supplementing the wider strategical reconnaissance of No. 228 Sunderland Squadron, which continued to use Malta for refuelling. Wellingtons of No. 148 were also operating again on regular night raids on Tripoli. Malta was indeed proving its value as an integral part in Mediterranean strategy as a whole; though its greatest ordeal was yet to come. The knights who defended this important little island in the great siege four centuries before would have been proud of their modern counterparts.

Maynard had finished his period in command of the R.A.F. at Malta and was about to be relieved by Hugh Lloyd; I was glad to have the opportunity of thanking him for his splendid contribution to our successful efforts in Middle East. About 3 a.m., in between the air raids, I took off for Gibraltar.

This fortress had suffered little from enemy action, there had been only one or two Italian raids and also a French one after the Oran incident. The airstrip across the racecourse was certainly proving of great value enabling a regular flow of long-range aircraft from home to reach Malta and Middle East. If Spain had been hostile it would have been a very different story, as there was no alternative staging-port and the runway was well within range of Spanish artillery from the Algeciras side of the bay.

That evening in a Sunderland of No. 10 Australian Squadron

took us ashore, whilst the Sunderland was being refuelled, a tricky business carried out with the minimum of lighting. Maynard came to meet me and told me that in the past few days No. 261 Hurricane Squadron had destroyed 9 enemy aircraft and probably 6 more for the loss of 6. The number of aircraft in this squadron had now been considerably increased partly by reinforcement from Middle East before Rommel's recent offensive had driven our forces back to the Egyptian frontier and partly as a result of operations by aircraft carriers from the Western Mediterranean, in which the Hurricanes were flown off from a position west of the Sicilian channel. Pilots had been double banked to cope with the increased raids and larger number of enemy aircraft taking part. This squadron was in action almost every day and on many nights. A second Hurricane squadron was about to be formed and No. 21 Blenheim Squadron had just arrived from England. This unit had specialized in low bombing attacks on shipping and had already scored successes against an enemy destroyer and merchant ship off the Tunisian coast.

Glen Martins of No. 431 General Reconnaissance Flight were keeping up their regular watch on Italian ports, supplementing the wider strategical reconnaissance of No. 228 Sunderland Squadron, which continued to use Malta for refuelling. Wellingtons of No. 148 were also operating again on regular night raids on Tripoli. Malta was indeed proving its value as an integral part in Mediterranean strategy as a whole; though its greatest ordeal was yet to come. The knights who defended this important little island in the great siege four centuries before would have been proud of their modern counterparts.

Maynard had finished his period in command of the R.A.F. at Malta and was about to be relieved by Hugh Lloyd; I was glad to have the opportunity of thanking him for his splendid contribution to our successful efforts in Middle East. About 3 a.m., in between the air raids, I took off for Gibraltar.

This fortress had suffered little from enemy action, there had been only one or two Italian raids and also a French one after the Oran incident. The airstrip across the racecourse was certainly proving of great value enabling a regular flow of long-range aircraft from home to reach Malta and Middle East. If Spain had been hostile it would have been a very different story, as there was no alternative staging-port and the runway was well within range of Spanish artillery from the Algeciras side of the bay.

That evening in a Sunderland of No. 10 Australian Squadron

I left for Plymouth, where we arrived at daybreak next morning after a beautiful night flight across the Bay of Biscay. A communication aircraft relayed me to Hendon where a member of the Air Council met me as I stepped out of the machine on the 5th May 1941, almost exactly one year since I had left that airport.

I am confident that the historian will not fail to do justice to the successful achievements of that period. I suggest they might be summarized on the following lines:

- A. Malta still held firmly. It was even in use for offensive operations by naval and air forces. The morale of the islanders had been built up and was at a high level.
- B. The Navy had complete ascendancy over that of the Italians. The Fleet base at Alexandria had not yet been threatened by land or much inconvenienced from the air. The Suez Canal was in use.
- C. In Libya the Italian Army and Air Force had been completely defeated. 180,000 of them had been taken prisoner and 20,000 killed. It was the Army's first victory of the war and had obviously acted as a welcome stimulant to all the British Empire.
- D. Italian East Africa was in our hands and in consequence the Red Sea was entirely safe for shipping. American ships were authorized to use it.
- E. In Greece we had implemented our promise of assistance to that brave little country to the best of our ability. The R.A.F. had given valuable support to the Greek Army from the very start of the Italian invasion.

We had yet to learn to what extent the German time-table had been upset. It had certainly included some fresh enterprise in Syria and Iraq, which was about to misfire.

All these achievements were the result of grand teamwork at all levels between the three services in which, I am happy to think, the R.A.F. played a very full part. Some measure of its contribution may be judged from the figure of 1,359 German and Italian aircraft destroyed on all fronts by our aircrews for a total loss from all causes, crashes included, of 584 of our own. We had achieved much with very little, and it was quality in personnel which had made it possible.

VARIOUS OCCASIONS

LONDON was looking very war-worn and drab that morning of May 5th 1941 as I drove through to report my arrival at the Air Ministry. Everyone seemed much thinner, a little weary, slightly on edge, but the spirit to endure was very evident. The war had been rather distant a year ago, now all were in the front line and particularly the Londoner.

There was much to be done in the few days before I would be due back in Middle East, or so I thought. Misunderstandings as regards aircraft supply and rate of reinforcements to be cleared up—approval to be obtained for new specialized units, for more rapid mobility of squadrons, for construction and protection of airfields and for a better organization for maintenance of aircraft and engines throughout the command. In such matters I found that personal contacts produced more results than many lengthy signals.

I attended two Defence Committee meetings late at night and deep down below ground. The Prime Minister was in the chair, wearing his syren suit and smoking his cigar. He seemed to be in excellent form, very much in charge of proceedings and apparently relishing his vast responsibilities in framing future war plans. The members of the War Cabinet were there, the Chiefs-of-Staff and one or two others specially invited to advise on the particular problems under discussion. On both occasions these were mostly concerned with Syria, Iraq, Crete and North Africa. Some of the regular members looked very tired, particularly those who had already spent most of the day in their own ministerial offices. It was an interesting experience to see the hub of the machine from which emanated the necessary directives to Commanders in the various theatres of war.

By the 18th May the results of conferences and discussions had given promise of a good supply of aircraft and equipment to Middle East, also of a more ready approval than had previously been the case of increases in establishments or changes in organization found necessary to meet some fresh development or emergency. My passage by air to Cairo via Takoradi had been arranged, but the Fates decreed that I was not to return

to my command. I was informed of the decision on the morning of the 19th May by Sir Archibald Sinclair, Secretary for Air. He told me that Air Marshal Tedder's appointment in my place would now be confirmed.

My personal feelings are better left to the imagination. It seemed that the change had already been planned when the signal recalling me to England for consultations had been sent. I received my G.C.B. from His Majesty and retired to the obscurity of my home at Grantham to await the next throw of the dice whilst the situation in Crete went from bad to worse.

In addition to many other activities, my wife was an ambulance driver in the local A.R.P. It was a strange experience for me to be an onlooker when the air-raid siren sounded and to watch her pedal off on her bicycle down the drive at 1 a.m. complete in uniform and tin hat plus gas mask. I wandered down to the ambulance station and helped to start up the odd assortment of vehicles each with its own particular starting tricks. They were not required that night but they definitely were some months later. It all made me realize how much we owed to our womenfolk for their devotion to duty in their voluntarily accepted tasks. It reminded me also of how insignificant a mere man can be on occasions.

At the end of May I was offered the post of Inspector-General R.A.F. It was a relief to me that my connection with the service was not yet to end, but it was unfortunate for my reputation that the announcement of the change in the Air Command in Middle East coincided with news of the fall of Crete. It was not lack of air strength alone which lost us that island.

On the 1st July (1941) I took over my new duties from Air Marshal Mitchell and for the next eight months worked in collaboration with Air Chief Marshal Ludlow Hewitt who had been an Inspector-General for some time. We shared the same headquarters at Richmond. It was twenty-seven years since we had shared the same aerodrome at Gosport. Ludlow was an active pilot of modern aircraft; few senior officers had such deep professional knowledge of the service, and it was a pleasure to work alongside him.

My job was most interesting for it gave me the opportunity of seeing something of the developments which had taken place in the fourteen months since my experiences in Training Command. Incidentally I saw a good many Hurricane fighters in reserve which I could have done with in Middle East four months

before if only they could have been wafted there on a magic carpet.

My usual programme took me on visits to air stations on three or four days of the week and the writing of reports on them occupied the remaining days. Points to be recorded ranged from details of personnel welfare to larger questions of organization and training. For my visits I used a Vega Gull, later called a Proctor, or a tricycle undercarriage twin-motor Cygnet. Wing-Commander Tomkinson did duty as my staff officer for the first few months and then came Squad.-Leader Michael Robinson. Tomky was an old friend of R.N.A.S. days and a good navigator on our air trips. Michael was a fighter pilot having a short spell after having distinguished himself to the extent of a D.S.O. and D.F.C. Alas! he was lost in a sweep over France early in 1943. He was a splendid type and one of those to whom this country owed so much in the autumn of 1940.

It did not take me long to find out how very healthy the R.A.F. really was. Everywhere I found keenness, enthusiasm and pride in the service. I put it down to the fact that all ranks realized the important contribution that the air was making towards victory by being continuously on the offensive. No waiting to build up large forces for a special event but just hammering away steadily.

Harris's Bomber Command was using Whitleys, Wellingtons and Hampdens as night bombers, and their main offensive was against German centres of war production with an occasional diversion to industrial targets in northern Italy.

Fighter Command, under Sholto Douglas, had passed to the offensive. Daylight sweeps in large formations over northern France were part of the regular programme in the policy of obtaining complete air superiority over the Luftwaffe which became so complete by 1944. The less-spectacular job of fighter escort to coastal sea convoys was well organized and controlled by the various Sector headquarters, operating Hurricanes and Spitfires from airfields round the coast. Beaufighters with the latest radar sets had developed the technique of night interception to such good purpose that enemy night raids were considerably reduced after heavy losses.

The Battle of the Atlantic was at its height and shipping losses remained heavy. From certain combined naval and air headquarters Coastal Command Sunderlands, Catalinas, Hudsons, Whitleys and Wellingtons were directed to their various anti-submarine tasks of convoy escort and interception of U-boats in

the approaches to the French Atlantic ports from which they were operating.

There was still a patch in mid-Atlantic as yet out of range of aircraft but the establishment of a base in Iceland had helped to reduce this area. In September (1942) I flew up to the island in a Catalina flying-boat of No. 209 Squadron. It was a long slow trip of ten hours against a head wind and a landfall in thick weather.

Air Commodore Primrose, the senior R.A.F. officer, looked after me well. I saw No. 612 Whitley Squadron at Reykjavik, and also on the same airfield some American Tomahawk fighters to deal with any German long-range aircraft. One had been reported a short time before. A Norwegian naval squadron No. 330 with American Northrop floatplanes were doing their share of patrols on the shorter-range sorties. Hudsons of No. 269 operated from a wet airfield at Kaldadarnes. Their Nissen huts were almost flooded out. It was an aircraft from this squadron which had recently bombed a U-boat to the surface near a convoy route and had then continued to keep it in view till a destroyer arrived to take it in tow. I saw the submarine lying alongside H.M.S. *Hecla* in Vialfiord. It was only slightly damaged, but the fact that the lights had gone out at the same time as the fresh-water tank burst must have induced the German commander to surface in the belief that he was sinking. I lunched with the Captain of *Hecla* and ate some of the captured rations, including some excellent ham from Denmark.

Primrose gave a dinner-party, and amongst other distinguished members of the services and Allies the Prime Minister of Iceland was present. I had not realized before that Iceland's parliamentary rule dates back to the tenth century and is therefore older than our own. I don't think the inhabitants were over-enthusiastic at our occupation. Besides some American marines lately arrived, there was a British division under Major-General Curtis. Iceland was too valuable a base to the Allies for the risk to be run of the Germans getting there first. No doubt the Icelanders are none the worse off financially as the result of having their British and American war-time visitors.

A Catalina of No. 240 Squadron flew me back to North Ireland. *En route* we passed over patches of sea fog and caught sight of portions of a scattered convoy which an escort frigate was trying to collect together again with the assistance of a Coastal Command Whitley. Later, in brilliant sunshine, we sighted the

Emerald Isle in all its beauty and alighted on Loch Erne, an ideal flying-boat base.

I resumed my round of visits, many of which took me to stations which had previously been under me in Training Command. It was interesting to see how they had developed. Blackpool had turned out to be a great success and was well on the way to achieving its peak figure of 40,000 trainees of various sorts. The landladies were doing their job nobly.

In London the various big blocks of flats round the Regent's Park area housed an Aircrew Receiving Centre with a total population of 6,500. A portion of them fed at a zoo restaurant and many of them used the Y.M.C.A. at 6, Avenue Road, the peace-time home of Lord and Lady Forres.

Many of these aircrew recruits came from the Air Training Corps. This pre-entry voluntary training scheme was working well and it certainly helped to produce very good material for the R.A.F. From Regent's Park the recruits went to Initial Training Wings. These I.T.W. were now established at various seaside resorts and under Air Commodore Critchley were providing, in a few weeks' course, physically fit young men, well disciplined, with an elementary knowledge of their future jobs and ready for the next stage in their flying career which took them to Canada. I spent Christmas at Torquay with an I.T.W., and it was an inspiring occasion for I have seldom seen such enthusiasm for work, drill and recreation as these lads were showing. What a pity that only a great emergency can produce such a spirit in our young men.

In December (1941) it was suggested that I should go to Australia and New Zealand via Canada and the U.S.A. on a liaison visit, but Pearl Harbour happened on December 7th and my trip had to be cancelled.

It now seemed to me that there was a limit to my usefulness as an Inspector-General. There already existed a very efficient one. It was improbable that, with the new arrangement of Supreme Commanders in the various theatres of war, I should receive an active command. The Air Force list showed too many Air Chief Marshals. It was time to make way for the younger Air Marshals and Air Vice-M Marshals, many of them of high calibre and with a fine record of war service. The Air Ministry accepted my offer to retire, and I left the active list at the end of February 1942.

In March I contested a by-election at Grantham as a Con-

servative, and found myself opposed by an enterprising Independent. The war was not going very well just then and the National Government shares were low. Singapore had been surrendered and we were retreating rapidly in Burma. I missed the seat by under 400 votes.

What was of more serious concern to me at that time was the death of my old mother shortly before polling day. Our relationship was more than that of mother and son, we were very good companions. We had been through some strenuous times together from the days when she brought me up on an isolated Australian sheep farm more than fifty years ago. She took me to England when I was seven years old, arranged for my education first at Bengoe preparatory school in Hertfordshire and later at Stubbington. We rejoiced together when I passed the naval entrance exam. into H.M.S. *Britannia*. She kept house for me when I was in torpedo boats at Sheerness and again later when I was learning to fly at Eastchurch. During the recent world war she refused to leave her flat in London and remained in her bed during the worst night blitzes. A grand old lady whose memory I shall always cherish.

A variety of activities occupied my time in the spring and summer of 1942. I joined the 2nd Kesteven battalion of the Lincolnshire Home Guard, and with the exalted rank of Major acted as Commandant of a week-end H.G. training camp and at other times as the H.G. liaison officer with the local air stations. The idea of a German parachute raid with the object of seizing an airfield was not entirely ruled out, though it was difficult to induce the R.A.F. fighter stations to take it very seriously. Anyway, some incentive was desirable to maintain the enthusiasm of the Home Guard now that a full-scale invasion of Britain was no longer a possibility. I enjoyed my time in the Home Guard under our genial Sub-District Commander, Colonel Gotto, and by the time the order to "stand down" came towards the end of 1944 I had reached the giddy heights of a full Colonel in command of a sector.

Wavell Wakefield, Director of the Air Training Corps, asked me to visit some of the cadet summer camps which were being held at various air stations. The lads spent a complete week, usually their only summer holiday, at some R.A.F. establishment and joined in the general work of the station. It was an interesting interlude and gave me the opportunity of seeing these enthusiastic lads and also something of the R.A.F. My method of transport

might almost be called "aerial hitch-hiking," for I was taken from one station to another in any aircraft that happened to be going that way. I think the best day's hitch-hiking I had started in a Tiger Moth, went on in a Sunderland and finished in a Fleet Air Arm Fulmar.

In the late autumn of 1942 I joined a Chatham House team under Lord Hailey, which was to attend the International Pacific Relations Conference in Canada in December. The Air Ministry gave me permission to travel by air, and Leslie Gossage, the Air Member for Training, asked me to take the opportunity, whilst in Canada, to visit some of the schools now operating under the Empire Air Training scheme.

On the 15th November at midnight, Liberator 592 took off the long runway at Prestwick bound for Newfoundland. This North Atlantic Return Ferry service had been operating with B.O.A.C. aircrew since May of 1941. As its name implies the service took back to Canada the pilots and aircrews of bombers recently delivered from that country or America. I sat on the floor of the machine, aft of the bomb compartment in company with fifteen of these seasoned airmen. Two or three Americans amused me by starting to play some dice game with vocal accompaniment, others read books or just went to sleep.

The accommodation was not luxurious and the heating did not seem to be working. There were thermos flasks of hot cocoa and plates of sandwiches, but they froze up like bricks after a few hours. Somewhere about half-way across we had to climb over a depression to avoid icing conditions. This took us to 22,000 feet and we wore oxygen masks for three hours. The connections to the oxygen supply pipes were spaced at intervals along each side of the fuselage. A visit aft for a certain purpose meant plugging in the end of the oxygen tube to any unoccupied connection as one progressed towards the objective. Having arrived there I failed to find the socket, so took a chance that I could stick a minute without the oxygen. I flopped as a result, and a sleeping figure on whom I subsided saw what was the matter and made the necessary connection. Having found my way back to my patch of floor I breathed the exhilarating gas hard for a minute or two and was quite all right again.

After twelve hours we came down through the overcast right over Gandar, in Newfoundland, one of the main airports of R.A.F. Ferry Command. It was the first time I had ever crossed the Atlantic and I hadn't seen the sea at all.

Anderson, who had flown me round India in 1928 and now commanded the local R.A.F. unit, gave me a hearty breakfast, and soon after we were on our way again to Montreal. We arrived at Dorval in just over six hours, making in all eighteen hours' flying-time from Prestwick.

Bowhill, Air Chief Marshal Sir Frederick, and now A.O.C.-in-C. Ferry Command, known to his friends as Ginger, met me on arrival. He and his wife, Dorothy, now an officer in the W.A.A.F., looked after me splendidly on the various occasions I found myself in Montreal during the next two months. I was also glad to see Reggie Marix, another R.N.A.S. friend, now Air Commodore and number two to Bowhill, just as cheery as I knew him nearly thirty-two years ago.

Some Canadians in England have told me that they have been colder here in winter than in their own country. I can only think they must have been talking of our houses, for my experience was that Canada can be very cold indeed in the open air and most decidedly hot indoors. They admitted that the winter 1942-3 was colder than usual.

Of my visits to New York and Washington in connection with the preparatory work for our Pacific Relations Conference I should like to write a good deal, but space forbids. Like most people who see America or at least bits of it for the first time, I was very impressed. I came in by air from Montreal in a Canadian Air Force Hudson on a misty morning and we had to wait in the aerial queue over Long Island Sound for fifteen minutes before La Guardia airport control gave us a landing-time. The runways were so congested with traffic.

After the necessary formalities with the port officials, who seemed not at all interested in the fact that I had been specially vaccinated for their benefit before I left England, I took a taxi to the Ambassador's Hotel. The driver was smoking a strong cigar, the car heating was on and the radio blaring away. He said, "Do we talk or listen to the radio?" to which I replied that it was as he wished. We talked of the war, but the conversation slumped a bit after he had informed me that, now the American boys had landed in North Africa, he supposed the war wouldn't last much longer as "they sure knew how to fix those Germans."

From the top of the Rockefeller building I saw the two great Cunarders, the *Queen Mary* and the *Queen Elizabeth*, in their war paint at the quayside close to the French *Normandie* still lying on her side, a rusty-looking wreck. The sight appealed to the imagina-

tion—where had they come from, where were they bound for next, Suez, Sydney or England?

Washington also gave me a thrill. So well laid out, so spacious, and with the view of those three fine memorials, the Washington, Lincoln and Jefferson, unspoilt by any ugly collection of houses crowded round them such as one sees elsewhere. I stayed at the Shoreham Hotel in considerable luxury and met many old friends—Sir John Dill, now Field-Marshal and one of the Combined Chiefs-of-Staff; Strath Evill, Air Marshal of the British Air Mission; Jack Slessor, A.O.C.-in-C. Coastal Command, over in America fixing up a complete air anti-submarine cover for the Atlantic. I lunched with Colonel Bill Donovan and heard of his travels since I had last seen him two years before in Cairo and Greece. General Arnold, head of the American Army Air Corps, found time to see me at his headquarters in the Pentagon, a colossal war-time building with miles of passages and many hundred offices. He used an electric scooter to get around them. General George, running the U.S.A. Transport Command, showed me his route map of the world, an eye-opener on what could be achieved with air transport, given unlimited aircraft. I met an American Admiral, recently back from the Battle of the Coral Sea. He described this naval air battle and seemed impressed with the effect of dive-bombers in a long-range naval action. I flew over to Baltimore and saw the immense works of the Glen Martin company turning out flying-boats, and Baltimore and Marauder bombers. The Mars, the largest flying-boat in the world at that time, was out on the slipway having some modifications done as a result of preliminary trials.

By the 4th December the British delegation to the Pacific Conference had assembled at Mont Tremblant, some four hours by train north of Montreal, a winter sports resort in the Laurentians. Besides Lord Hailey our team included—Hugh Byas, Sir John Clague, Capt. Gammans, M.P., Creech Jones, M.P., Sir John Pratt, Sir George Sanson, Sir Fred Whyte, Miss Margaret Wrong and Ivison Macadam. Most of them were experts on one or other of the countries of the East: India, Burma, Malaya, China and Japan. Other nations represented at the conference were Australia, Canada, China, Fighting France, India, Korea, Netherlands and Netherlands Indies, Philippines, Siam, U.S.A. and New Zealand, whose Chairman, Walter Nash, I had met at the Pacific Defence Conference of 1939.

Chatham House publications have given a full account of the

FROM SEA TO SKY

proceedings which occupied our time for some ten days. Views were expressed on a post-war policy by the United Nations which might help to restore and maintain peace and prosperity in the various countries, at that time, in Japanese hands or still threatened by them. The air did not come into the picture very much, but the idea of some sort of International Air Force, on a quota system of contingents allotted by those nations particularly interested in the region concerned, met with a good reception. It was my only contribution to a conference which covered much ground, emphasized the intense nationalist spirit of some countries represented, gave opportunity for the Dominions to demonstrate by their independent attitude that there was no British Empire bloc and generally taught us all a good deal of geography.

As leader of the U.K. delegation Lord Hailey was quite outstanding in his handling of some outspoken criticism by certain representatives on so-called British Imperialism. I did not believe the story that an American had been heard to remark to a Canadian, "Isn't it about time you stopped paying taxes to Britain as we did 150 years ago." Taking everything into consideration I came away from that Mont Tremblant conference with the feeling that some very valuable spade-work had been done which would be of considerable use in any subsequent discussions among the United Nations on future world security.

CANADA, WHITEHALL AND COWES

I HAD my first view of the British Commonwealth Air Training Plan 1943 (its official title at that time) during a visit to a Canadian air station at St. Hubert, outside Montreal. The temperature was about 10 degrees below zero and the wind certainly made it feel so. I was impressed with the rolled-snow runways and the excellent heated hangars for maintenance of aircraft, for here, in Canada, there was no need for dispersal on account of possible enemy air-raids. The aircraft were Harvards and there seemed to be a complete circle of them in the sky waiting their turn to land. The control car, at the end of the runway in use, was working overtime giving red flashing signals to aircraft who were too close up to the next ahead in the aerial queue. They had to pull out of the line and take their turn to land at the end of the queue again. This was high-pressure training which I had not seen before, and Group-Captain Scott told me that flying hours were well over ten thousand a month, which seemed remarkable, having regard to the winter conditions.

My next visit was to Ottawa to fix up details of my programme of visits. McKean, Air Vice-Marshal and now head of the U.K. Air Liaison Mission in Canada, took me to see Breadner, Chief of the Air Staff, and Leckie, head of the training. Both these officers had distinguished themselves in the R.N.A.S. during the last war. I was given every facility and, with that slick efficiency to which I was to get accustomed in the following weeks, my programme was arranged within a few hours. Long-distance telephoning seems easy in Canada and America.

On December 20th, with a morning temperature of — 20 degrees, I left Ottawa in a Lockheed for Kingston, where they trained Fleet Air Arm aircrew.

At Picton, the next stop, R.A.F. air bombers and navigators were learning their job, but the engines of the Ansons were feeling the cold a bit. It took a little time for R.A.F. technical personnel to get used to the tricks of engine maintenance in a Canadian winter. At both these air stations, and indeed at all those I subsequently visited, I found that a quarter of an hour talk to the officers and men on conditions at home seemed to interest them,

judging by the questions they put to me afterwards. Though the aircrew under training were only in Canada for six months or so, the instructional and maintenance staff stayed much longer, and some of them wanted to get back to the war again before it finished.

The same evening I flew on to Toronto and landed on an airfield where Norwegians were being trained. They called it "Little Norway" and seemed happy enough in their temporary Canadian home. Johnnie Johnson, Air Vice-Marshal, R.C.A.F., whom I had known at the Imperial Defence College, gave me dinner before driving me out to the airport. The windscreen wipers of the car were busy keeping the screen clear of falling snow and I wondered whether the air-liner would be leaving on schedule at 10 p.m. However, sharp at 9.55 the Lockheed Lodestar pulled up under the floodlights outside the nice warm waiting-room of the airport, and with the other passengers I walked the few yards in the snow and took my seat in the heated cabin. I was beginning to learn something of this modern weatherproof flying to schedule for which Trans-Canada Air Lines (T.C.A. for short) were already famous. With the falling snow flashing by in the glare of the headlights we were soon gaining speed down the illuminated runway. Then off into the night and up through the snow-clouds into bright moonlight on the first hop of the 1,000-mile flight to Winnipeg. We landed at North Bay and Kapuskasing for refuelling. After Winnipeg, on to Regina, guided by the radio beam, the key to accurate navigation in this trans-continental flying. They called it "riding the beam."

Breakfast at the Saskatchewan Hotel with an old R.A.F. friend, Group-Captain ap Ellis, and afterwards by a local communication aircraft to an elementary flying school at Caron. Here they used de Havilland Tiger Moths with coupé tops and heated cockpits. Then to No. 34 R.A.F. service F.T.S. at Medicine Hat where the weather was warmer due to a dry wind, known as a Chinook. It seemed to evaporate the snow in a remarkable way. From the air one can actually see the area which it has affected. I called on the Mayor next morning and heard the Indian legend about the chief of a tribe who was told by the serpent in the river that if he were to conquer his enemies he must throw his beautiful bride into the water. He didn't fancy the idea much, but mentioned it to his lady. She was quite willing to sacrifice herself and was accordingly thrown to the serpent. It was not a great compliment to the bridegroom, but I could believe anything of Medicine Hat for it

is quite out of the ordinary. It has a ready-made gas supply which comes out of the nether regions and is used by householders and works for heating and lighting. I liked everything about Medicine Hat including ap Ellis's flying school.

Calgary was next on my programme, and I found another R.N.A.S. friend, Douglas Iron, Group-Captain, R.A.F., serving under Canadian Air Vice-Marshal Howsam. No. 37 S.F.T.S. was much the same as all the others, with excellent and well-heated living-quarters, recreation-rooms and hangars erected by the Canadian Government.

It was now only two days before Christmas, and it was suggested that I might like to take three or four days off whilst officers and men at the schools celebrated the occasion by a short stand-easy. I went to Banff by car through the foothills of the Rockies, the scenery quite beautiful in the winter mantle of snow.

I thoroughly enjoyed my four days at the Mount Royal Hotel, where I fed sumptuously, met some kind friends, skated on an excellent ice rink and slid down the mountainside on skis. British and Dominion airmen were there in force, a few Australians and New Zealanders on skis for the first time. I had a happy Christmas with some of them. On the 27th December the Canadian Pacific Railway collected me off the platform of a very cold station and carried me in warmth and comfort over the Kicking Horse Pass in a blizzard down the slopes into Vancouver where we arrived the following morning to find it warm and raining.

During the next five days I saw so much that was of interest to me that a full chapter would be needed to describe it in detail and this book is already over-long. I must therefore confine myself to giving a summary of events and impressions.

A Grumman Goose amphibian aircraft took me over to Patricia Bay, on Vancouver Island, to visit Group-Captain Pope's ("Poppie" to his friends) air station, training R.A.F. aircrew on torpedo-dropping Hampdens. I stayed in a luxurious suite of rooms at Government House, Victoria, as the guest of Lieut.-Governor Woodward. Air Vice-Marshal Stevenson, R.C.A.F., took me over in another amphibian to an inaccessible and isolated flying-boat base at Uclulet on the west coast of Vancouver Island, where elderly Stranraers were doing anti-submarine patrols out into the Pacific. At Vancouver I enjoyed the generous hospitality of Austin Taylor and his family, one of the big men of Western Canada. He showed me over a local aircraft works. It was a subsidiary to the great American Boeing company and was pro-

ducing Catalina flying-boat amphibians. Also the Burrard Shipyard, building 10,000-ton merchant ships at high pressure on eight slipways.

Before dawn on the 2nd January I was seated in the T.C.A. plane eastward bound, but to my great regret we did the trip before it was daylight and I missed one of the most beautiful sights in the world—dawn over the Rockies in winter.

We came into Lethbridge riding the beam, and down through a thick layer of snow-clouds. A small Lockheed ten picked me up, and during the next five days I visited nine prairie flying schools of various sorts—Bowden, Penhold, North Battleford, Swift Current, Moose Jaw, Weyburn, Esteven, Carberry and Neepawa. I met many officers and men who had served with me at one time or another. Among them Wyndham Farrington, my companion on the London—Grantham bicycle ride of 1926. He commanded at Penhold, and it was here that I met the lowest temperature of my trip. Twenty-five degrees below zero and yet the Oxford aircraft and their Cheetah engines were functioning normally. The engineer officer and his ground crew had learnt the technique of cold-weather maintenance, of taking machines out of the heated hangars one by one, getting them started and in the air before they froze up.

None of these airfields was out of action through snow, though there had been heavy falls. The snow experts knew their job well and were able to judge whether to scrape and blow the runways clear with the special apparatus provided for the task or simply to roll it flat with gang rollers. Most of those I landed on were compacted snow runways with small firs stuck along each side to mark the actual track and to give the necessary aids for landing. It is not easy to land on snow without some such marks.

Bonham Carter, Group-Captain, R.A.F., flew me into Winnipeg where I stayed for two or three days. At the railway station I attended an interesting little ceremony when a train arrived carrying British, Australian and New Zealand aircrews *en route* for training at the Prairie schools. It was in the middle of the morning and the Winnipeg Women's Reception Committee was there to meet them. During the half-hour before the train was due to continue its journey, a Canadian Air Force band played dance music and the airmen danced with some of the young ladies of the city who had left their various occupations for the occasion. Each man was presented with a packet of cigarettes and sweets by the Local Pilots and Observers Association of the last war. The whole

affair was a very pleasant half-hour interlude for the men after three days in the train and it was a typical example of Canadian hospitality.

In contrast to the dreary blackout in England it was a refreshing sight to see Winnipeg, like the pictures on Christmas cards, brilliantly lit against a background of snow, as we circled round after taking off for the night flight to Toronto. I stayed at the Royal York Hotel, the largest in the British Commonwealth, for three days and saw some interesting examples of Canada's air effort in and around Toronto. The de Havilland works were in full production on Mosquito assembly and the Victory Works had recently started making Lancasters.

My programme included visits to various training and manning depots. One of these occupied a portion of the enormous Exhibition building and housed 5,000 recruits, some of them French Canadians, for whom a small school was arranged, attended by those who could not speak English. The Women's Division of the R.C.A.F. had their training headquarters at Toronto. I saw a fine-looking batch of them on parade. Incidentally I liked their caps so much better than those of our W.A.A.F.s. An R.C.A.F. medical research chamber, specially equipped for testing the reaction of pilots to G, intrigued me immensely. The victim, dressed in a special pressure suit, was seated in a small transparent cabin fitted as a pilot's cockpit and suspended from a long swinging arm. This was rotated at varying speeds, whilst an automatic cine-camera recorded the pilot's facial expressions in the various stages up to complete blackout. It was claimed that the special suit enabled fighter-pilots to indulge in high-speed tight turns or rapid pull out from dives without blacking out. After seeing pictures of the result I felt rather relieved that my active flying days as a pilot were over.

No description of a winter visit to Canada would be complete without some reference to ice hockey. At the Toronto Maple Leaf Stadium I saw the Canadian Navy play the R.C.A.F. It was a very hot contest which the Navy won after a real good free fight had interrupted the game for at least five minutes. The referee could do nothing about it; he merely leant on the barrier till it was all over and then ordered off all those of both teams who had removed their gloves, the more effectively to hit their opponents. My host, Air Commodore McGill, said that the services matches were always a good draw, as the onlookers would be pretty sure of some such incident.

After Toronto I went to Trenton and saw some rather sad young men, for it was here that would-be pilots who could not make the grade were reclassified for training in other aircrew duties. Eliminations, as they were called, were running up to a figure of 20 per cent. from the elementary flying schools alone. The grading schools at which recruits were tested for aptitude in the air before they left England subsequently reduced this wastage figure considerably.

T.C.A. took me right through to Moncton on the east coast to see the large depot which received aircrews who were either west-bound for the Prairie schools or east-bound by ship to England on completion of their training. The usual number in camp was about 6,000, and the problem was to keep them suitably occupied and interested during the weeks they were there. The bottlenecks were the training capacity of the schools on the one hand and shortage of shipping on the other. Close to Moncton at Debert, a Hudson operational training unit was turning out aircrews up to a standard which would qualify them to ferry delivery aircraft across the Atlantic.

That completed my very interesting tour of this remarkable training organization and I returned to Ottawa to report my impressions to those concerned. I was privileged to stay at Government House and enjoy the charming hospitality of the Earl of Athlone and Princess Alice whom I had first met twenty-seven years before in 1915 at La Panne in Belgium. I had lunch with Malcolm Macdonald, the High Commissioner, and told him of my trip. He had recently returned from an air tour in the north of Canada, the story of which is told in his very interesting book *Canadian North*.

During my tour of this great Dominion of Canada I met some very distinguished and important men. In addition to those I have already mentioned I remember V. M. Drury, the President of the Canadian Car & Foundry Company, whose lunch-party in Montreal on my behalf included: J. W. McConnell, owner of the *Montreal Star*; R. C. Vaughan, President of Canadian National Railways; D. C. Coleman, President of the Canadian Pacific Railway; Dr. Cyril James, Principal of McGill University. At Winnipeg I renewed my acquaintance with Edgar Tarr, Victor Sifton and J. B. Coyne, all of whom had been at the Mont Tremblant Conference. At Toronto I lunched with J. Proctor of the Imperial Bank of Canada, and Gilbert Labine who had developed the pitchblende mine below the Great Bear Lake, and thanks very

largely to air transport had put Canada on top in radium production.

In the course of various conversations I learnt that Canada wanted to increase her population of something over eleven million. Opinions differed as to the maximum figure which should be aimed at. Some said twenty-five million, but I wondered how they would employ all of them during the freeze-up.

Sentimental ties with this country were obviously strong and particularly since the visit of the King and Queen in 1939. I was shown, with much pride, photographs in connection with this visit and by people in Quebec as well as in Alberta. What is not very popular is the idea that relationship should be too closely defined or that any attempt should be made to tie Canada to Britain by legislation. They have their own big French-Canadian problem, and their idea is that it should not be aggravated. In all the shops and indeed in the storerooms of the air stations I could find very little that was not made in Canada. Our own contribution seemed to be confined to Scotch whisky and high-class clothing material, but no doubt the expert economist would be able to explain how we are going to trade in the future.

Back in Montreal, I reported myself to Bowhill for passage to England, but I remained on his hands, or rather in his very comfortable flat, for a few days with influenza. However, on January 31st (1943) a passage was found for me in a *Liberator* bound for Gandar and Prestwick. This time I had only one fellow-passenger, Sir John Clague, who had been with me at Mont Tremblant. It was a more pleasant trip than the one before, thanks to Arctic sleeping-bags which kept us warm in spite of a temperature of — 40 degrees at 20,000 feet. At dawn on the 1st February, nine hours out from Gandar, we sighted the Irish coast and landed at Prestwick an hour or so later. If it is ever again my good fortune to visit Canada and if I have to do it in mid-winter, I hope it will be in an air-liner with a pressure cabin and a heating system which actually works.

At the beginning of August 1943 I accepted an invitation from the Air Ministry to rejoin the active list temporarily as an Air Vice-Marshal. In the capacity of an R.A.F. representative I joined an inter-service committee which was forming to study post-war problems. This Post-Hostilities Planning Committee (P.H.P. for short), as it was called, had a Foreign Office chairman, Gladwyn Jebb, and other members included Admiral Bellairs, he and I had been in the *Britannia* together as naval cadets; General

Grove White, Brigadier Van Cutsen, Mr. Spaight of the Air Ministry and Mr. Waldock of the Admiralty.

The war was going sufficiently well to justify a detailed study of an instrument of surrender which would be suitable for presentation at any time Germany or any of her allies decided to throw up the sponge. That was one of our immediate tasks. Then there came the problem of occupation of enemy territory and whether it should be effected by allotting zones to each occupying-power or to cover the whole territory with a combined force. The composition and task of Control Commissions to carry into effect the surrender terms was another matter on which our recommendations were required. I am glad to think that our ideas in all these matters were generally acceptable and that the result is now working out as well as might be expected.

However, that was not all we accomplished during the ten months of an existence as a committee, for we had a good and enthusiastic team of experts whose combined knowledge of history and geography covered most of Europe and even further afield. We tackled the question of frontiers, the disposal of enemy colonies and, of even greater importance, a world security organization which might prevent future wars. I was glad to have the opportunity of developing the idea of a combined United Nations Air Force on the quota system which I had suggested at the Pacific Relations Conference in Canada the year before. It formed part of the scheme which we outlined in a paper, but these matters were very much post-war and just at that time, when the preparations for D day and the Normandy landings were in full swing, it was difficult to get anyone to take much interest in them. They went into cold storage from which they have subsequently been extracted and judging by the way things are shaping they have not suffered much as a result of their time in the refrigerator.

Though I have written these memoirs in a light-hearted vein, a reflection on my outlook on the part that chance plays in the destinies of mankind, there are times when the tune must be changed. In the autumn of 1943, when U-boats in the Atlantic were working in packs against the convoys, certain very long-range Coastal Command squadrons were operating, in conjunction with Canadian and American aircraft, from coast to coast. The gap in the middle had been bridged and one of the squadrons which had done it was No. 120, commanded by our eldest son Dick.

On October 4th, at 11.00 hours, a signal intercepted from his

Liberator V 120 gave information that he had sighted a U-boat and was going in to attack. That is the last news heard of him and his crew and we are left to surmise that, somewhere 200 miles south of Iceland, he was shot down by the 20-millimetre guns with which U-boats had recently been re-armed. Three Atlantic convoys had passed through a concentration of them without serious loss, and it was later revealed that the long-range squadrons had sunk six of these underwater pests and damaged nine others. A triumph for air power, but, like all such great efforts in war, there were those at home who mourned the loss of a well-beloved husband or a fine son.

By the end of May (1944) I had completed my time on post-war planning and reverted to the retired list. Admiral Lionel Preston, head of the Admiralty Small Vessels Pool, was calling for additional volunteers in his Yachtsmen's Emergency Service. They were required for manning harbour launches and other small craft. I signed on and was immediately directed to Portsmouth to take over a motor-fishing vessel, M.F.V. 124, as skipper. Together with my crew of six amateurs I presented myself at the tradesmen's entrance to Portsmouth barracks and drew my seaman's kitbag, filled it with blankets, oilskins, seaboots and other necessary equipment and joined our craft in No. 1 Basin of Portsmouth dockyard. There were many others doing the same thing, and as soon as we had nosed our way out of the harbour we knew the reason why. The Solent from the Spit Fort to Yarmouth was a really wonderful sight, full of every conceivable type of vessel and all obviously assembled in preparation for D day.

Under the orders of the Naval Control Officer at Cowes we undertook all sorts of missions: carried merchant skippers to and fro for briefing, humped frozen meat, potatoes and vegetables, carried boarding officers to ships and then finally one night we saw the whole fleet disappear. D day had arrived, and we awaited news of the result, for on that depended, so far as we were concerned, our future tasks. It was not long before we heard that all had gone well, and so for the rest of our month's service afloat there were to be no heroics, just real hard work.

It was a happy party on board; the average age of my crew was just over 60; between us there were four D.S.O.s of the last war and foreign languages sufficient to make conversation interesting with crews of Allied ships. We liked the trim Dutch coasters, spotlessly clean and usually with the Captain's wife on board as part of the crew. Going alongside some of the cross-Channel

steamers with small landing-craft festooned on all their davits was a nightmare, but somehow we managed to survive without hitting anything really hard. We were on nodding acquaintance with bits of Pluto and Mulberry, also with one of the first "doodle-bugs" which snortled over our heads and went on to explode somewhere inland.

During the whole of that period the congested Solent presented a wonderful opportunity for an air torpedo attack. Frequently the clouds were low and would have provided just the right cover, yet I did not see one single German aircraft. The R.A.F. had done its job and had made it possible to concentrate this invasion fleet and guard it on its mission. I really believe that a good many sailors realized this fact, judging from the various conversations we had with all and sundry whilst lying alongside some of the strange craft we met during that month of June 1944.

We paid off at the end of the month, and before leaving Portsmouth I was invited to lunch on board the *Victory* with the Commander-in-Chief, Admiral Sir Charles Little. He was amused at my description of our experiences, and we laughed at the idea that whereas I had started the war as an Air Chief Marshal, my final executive command was in the capacity of skipper of a motor-fishing vessel with the relative rank of Chief Petty Officer.

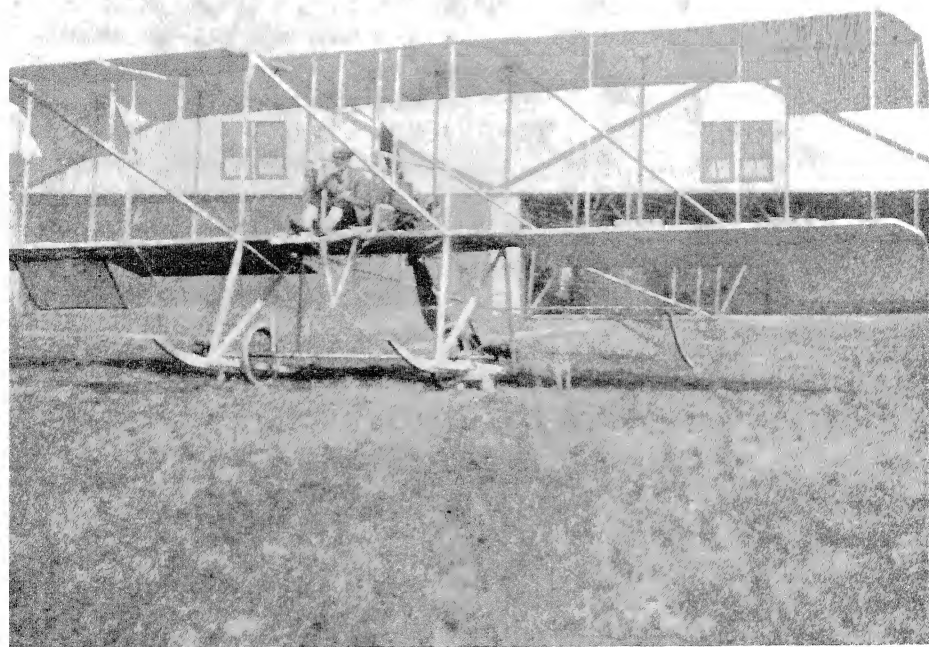
I have ventured to name this book *From Sea to Sky*, so it must end in the air and not in a fishing vessel. A flight in a Sikorsky helicopter seems to provide a suitable finale. It was in one of these strange craft I ascended into the sky from a New Forest airfield on the occasion of a visit to an A.T.C. camp. With a Fleet Air Arm pilot at the controls we twisted our way over to Calshot to alight on the cricket field of the seaplane station I had commanded in 1914.

Victory had come in Europe, and a few weeks later two atomic bombs dropped from aircraft completed the defeat of Japan in the Far East.

From the time the Wright Brothers first flew their crude bi-plane in America it had taken barely forty-one years to develop the aeroplane as an instrument of war more devastating than any other invention of man.

The spin of a coin had enabled me, for thirty-five years, to play some part in the building up of an air service which in 1940 protected this country from invasion and whose sustained air offensive over a period of five years made final victory possible.

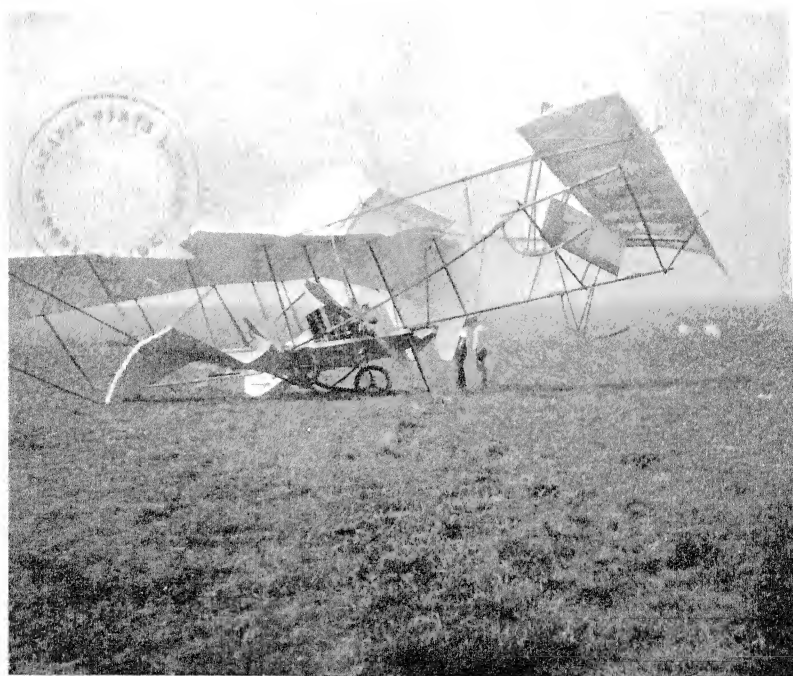




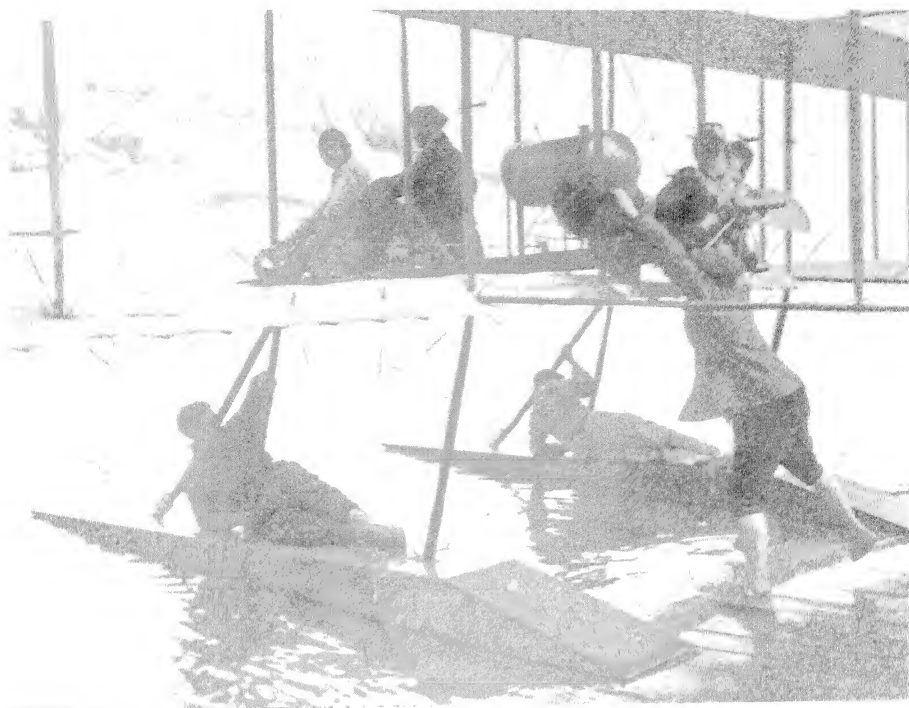
March 1911. The machine in which we learnt—a 50 h.p. Gnome Short (Pusher).



November 1911. A Short with air bags on skids after ditching in Medway, and about to be flown back to Eastchurch.



1911. Pilot unhurt: Repairs cost under £200.



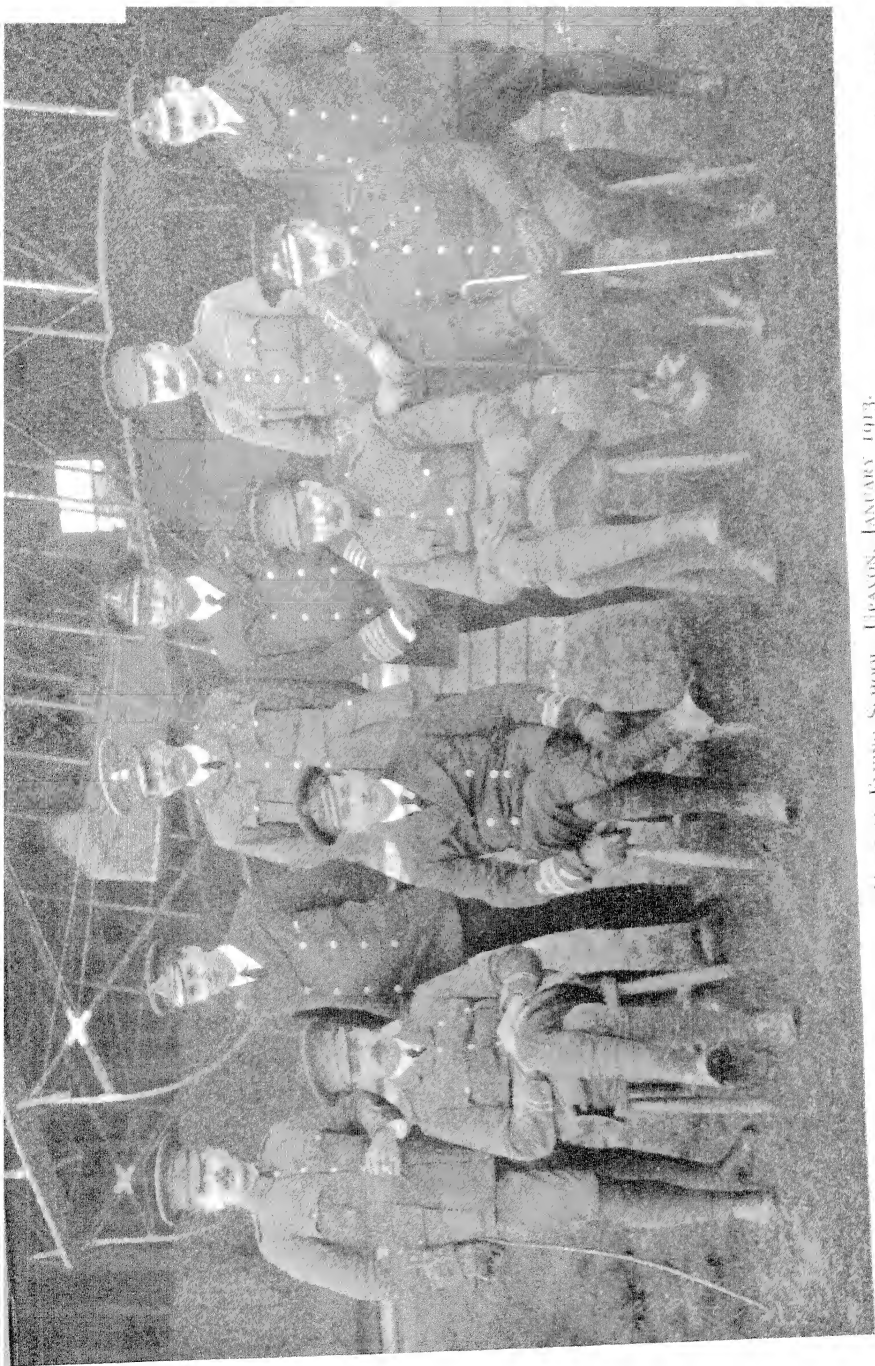
March 1912. Monte Carlo. Fischer in a Henri Farman starting with three passengers.



July 1914. Calshot. A 160 h.p. Gnome Short after successful torpedo experiments.



1912. The Author in a Maurice Farman, 70 h.p. Renault engine.



CENTRAL FLYING SCHOOL, UPFALON, JANUARY 1913.

Asst. Paymtr.

E. G. R. Lüthgow

Capt.

J. H. Lidderdale, R.N.

Capt. J. D. B. Fulton

Major

H. M. Trenchard, D.S.O.

Lieut. A. M. Longmore, R.N.

Capt.

G. M. Payne, M.V.O., R.N.

Capt. J. M. Salmon

Lieut. and Quar-Mstr.

F. H. Furby, V.C.

Major E. L. Gerrard

Eng. Lieut.

C. Randall

April 1914. Mr. Winston Churchill boarding Maurice Farman's airplane, Portsmouth Harbour.
Photo. by Lieut. A. M. Longmore, R.N.



1. The first part of the report is a general description of the project and its objectives. It includes a brief history of the project and a statement of the problem being studied.

2. The second part of the report is a description of the methods used in the study. This includes a description of the experimental setup, the data collection methods, and the statistical methods used to analyze the data.

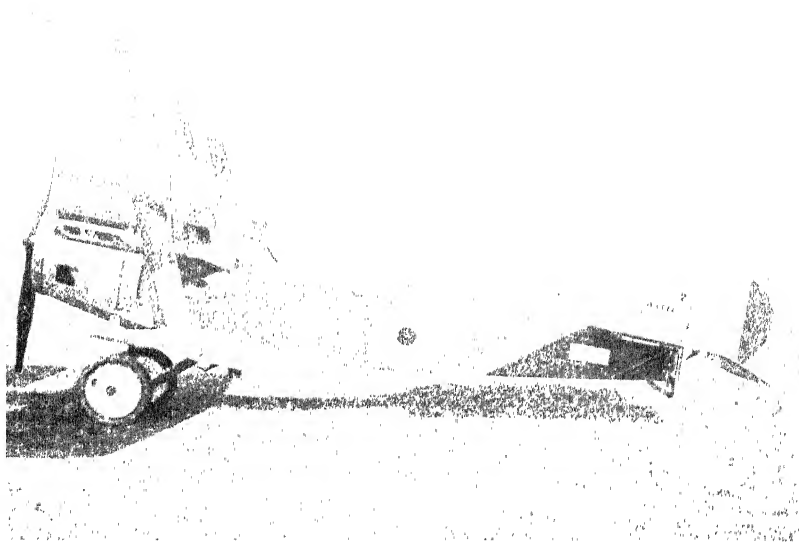
3. The third part of the report is a description of the results of the study. This includes a description of the data collected, a description of the statistical analysis, and a description of the conclusions drawn from the data.

4. The fourth part of the report is a discussion of the results of the study. This includes a discussion of the implications of the results, a discussion of the limitations of the study, and a discussion of the future work that needs to be done.

5. The fifth part of the report is a conclusion. This includes a summary of the findings of the study and a statement of the overall conclusions.

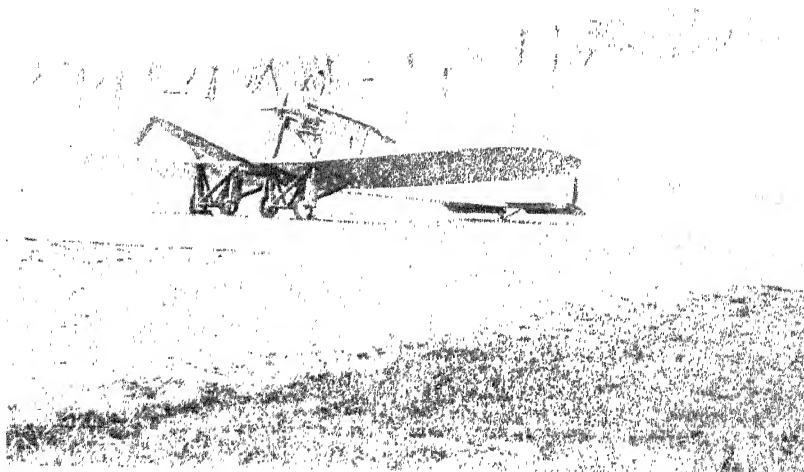


A photograph of the author, Dr. J. H. ...
 taken in the laboratory of the ...



FRENCH

Sopwith Triplane 150 h.p. Hispano-Suiza engine, 1 Vickers gun. Speed 120 mph. Climb 10,000 feet in 9 minutes.



GERMAN

Handley Page 2 Rolls Royce engines.

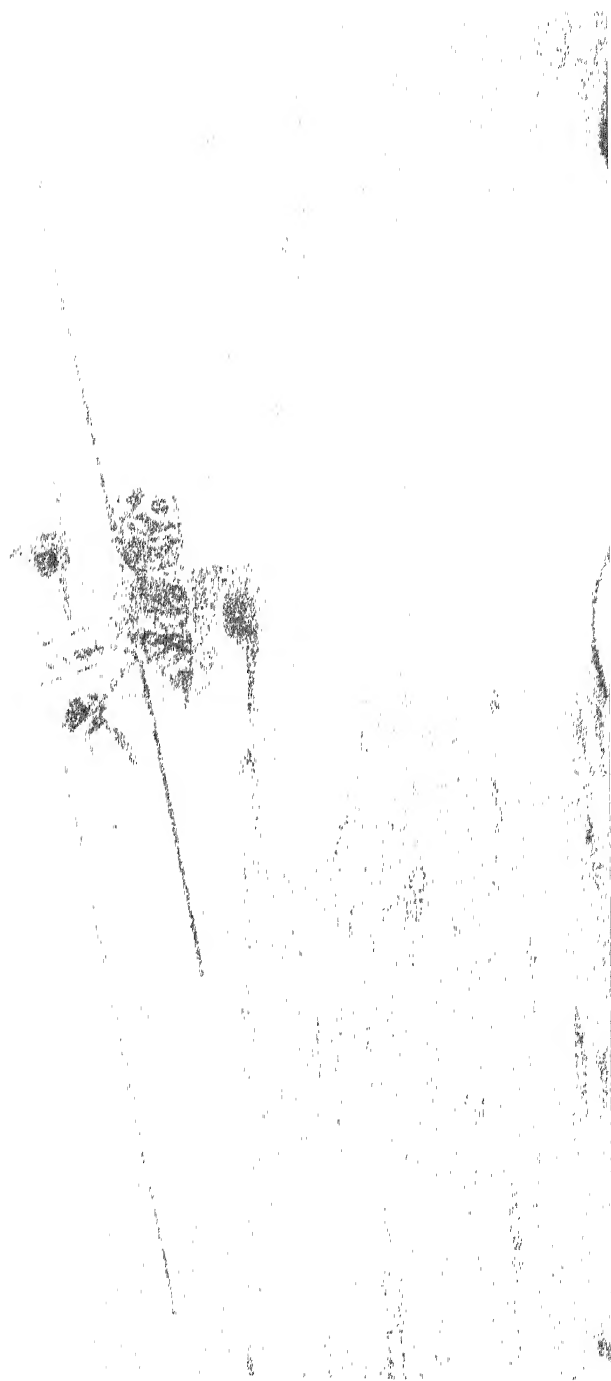


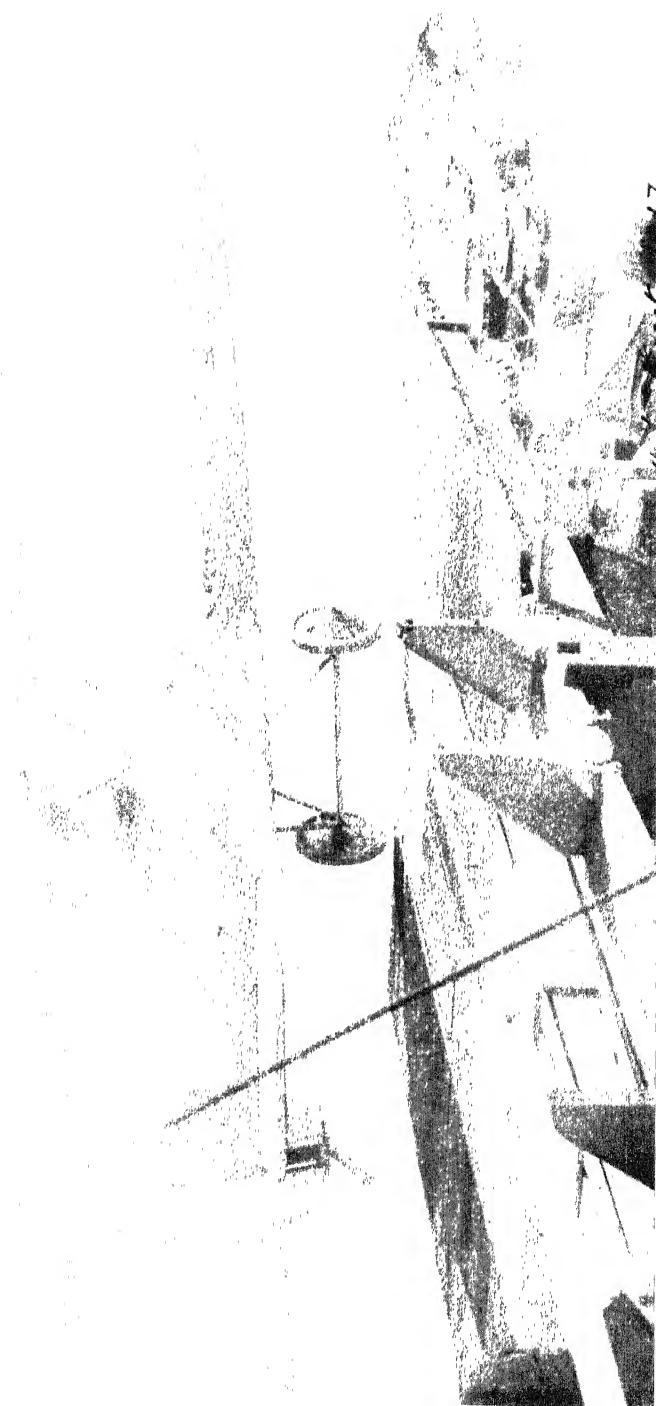
Figure 1. A person standing in a field, holding a long stick or staff.



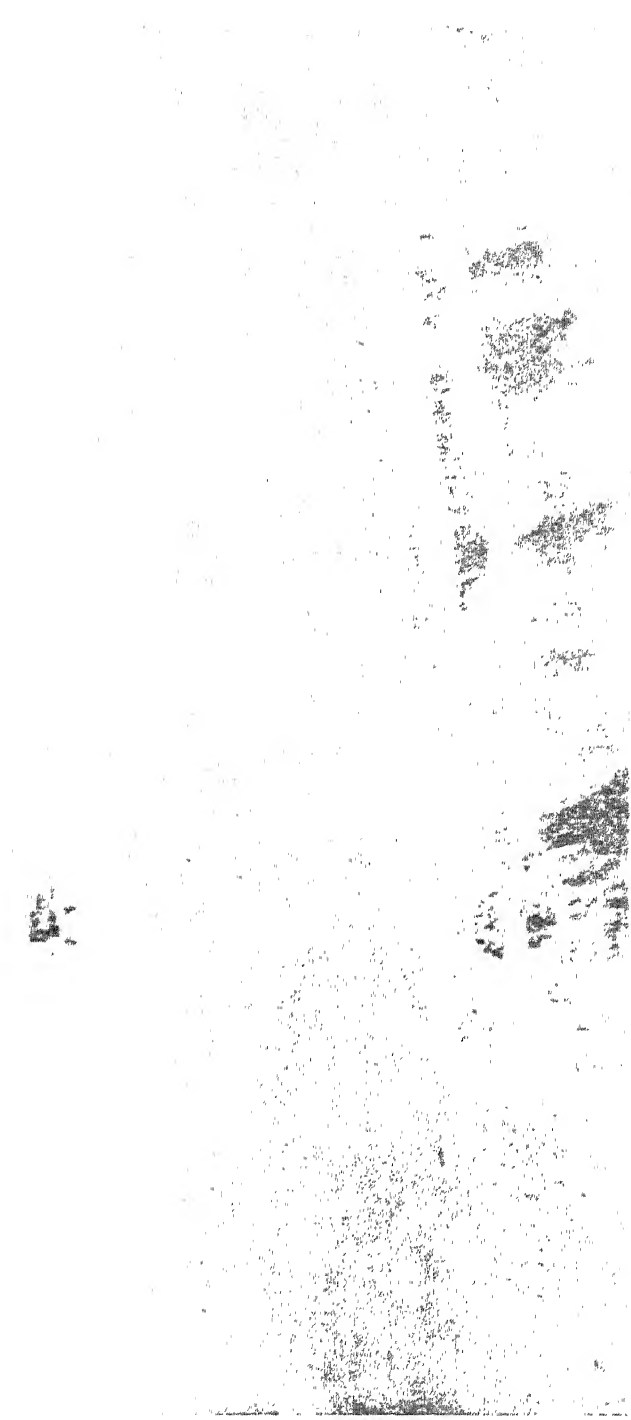
PEOPLE GATHERING IN THE STREET



PEOPLE CARRYING A LARGE OBJECT IN THE STREET

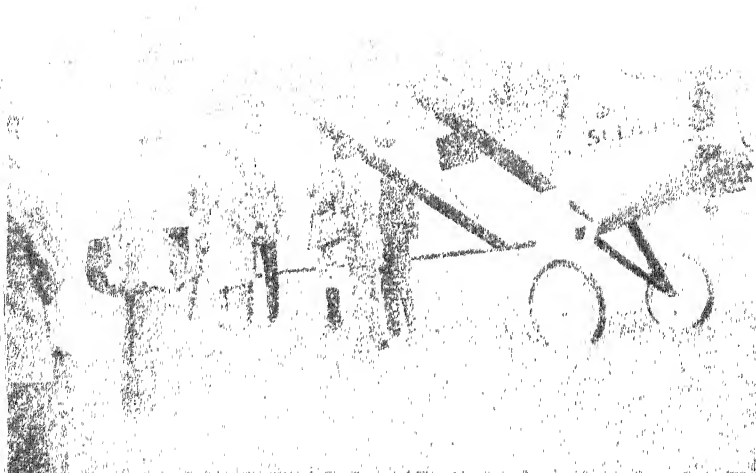


1917. A Sequoia Paper Building at H.M.S. *Paradise*, 1917.

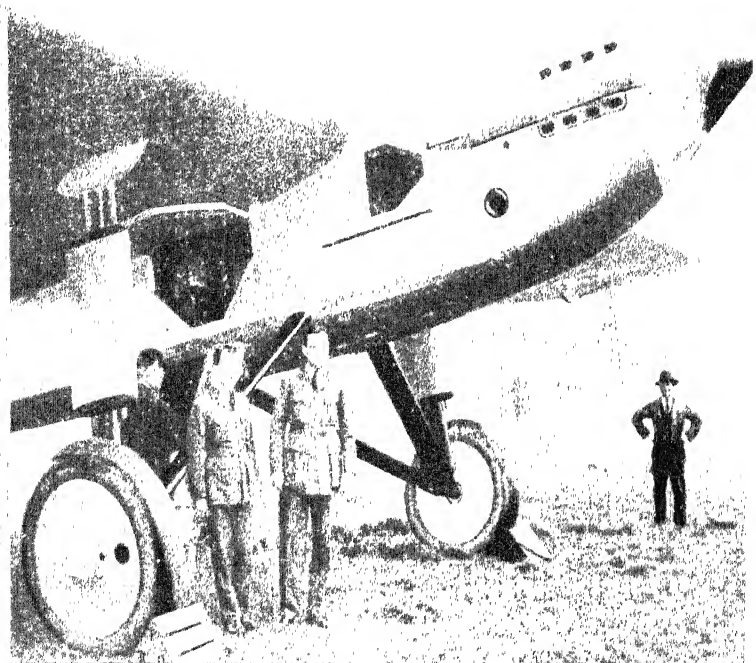




An Arranged for John, who had been in London, was in the city.



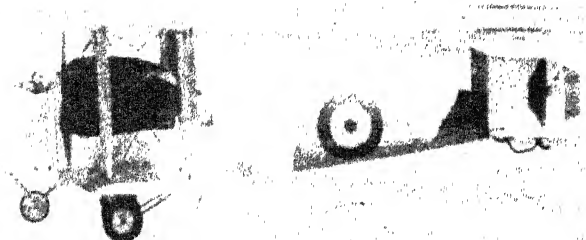
May 1918, 1917, Captain Lindbergh at Gogoport



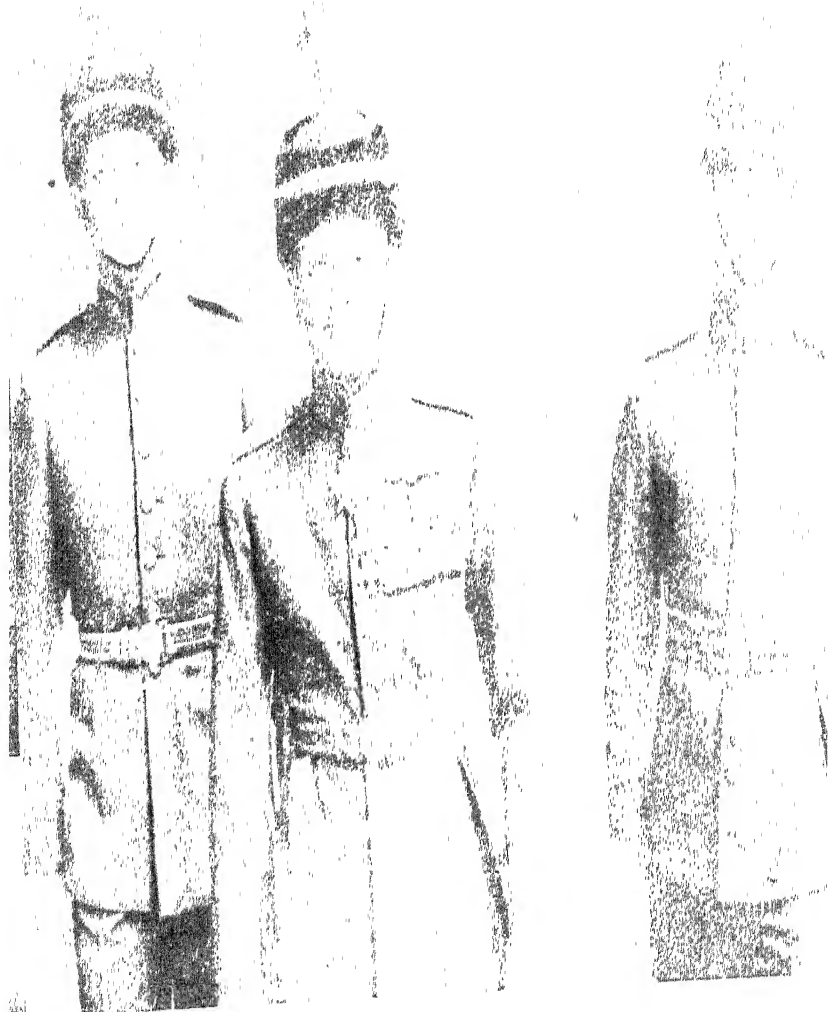
December 1929, Jous Williams and Jenkins with their Fairy long-distance monop



St. Philip's School and the St. Philip's School
Washington, D. C.



A Napier-engined Version of the Buick Model of 1930



To the Left, July 10th, 1939, with my son Dick and James

1917



1918

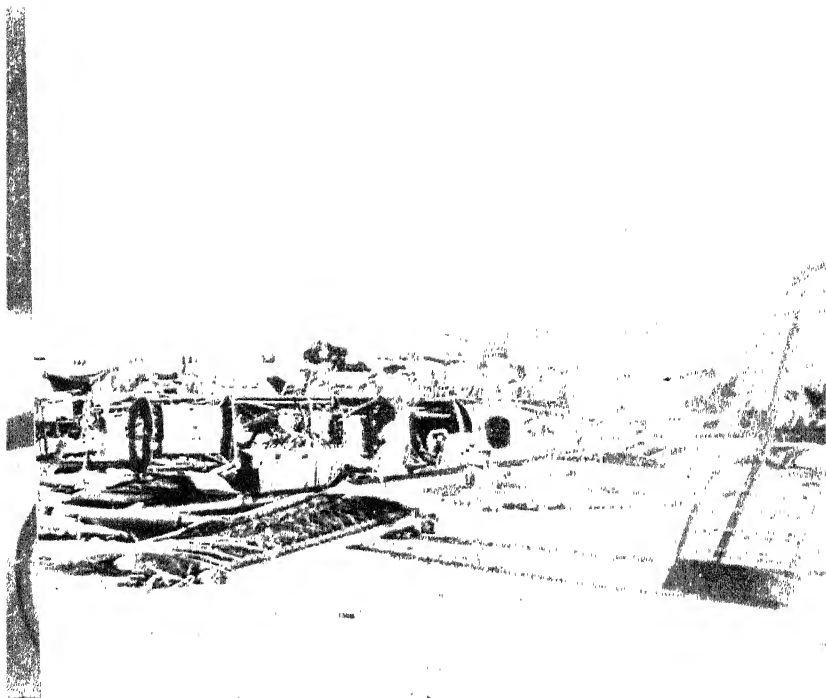


1919

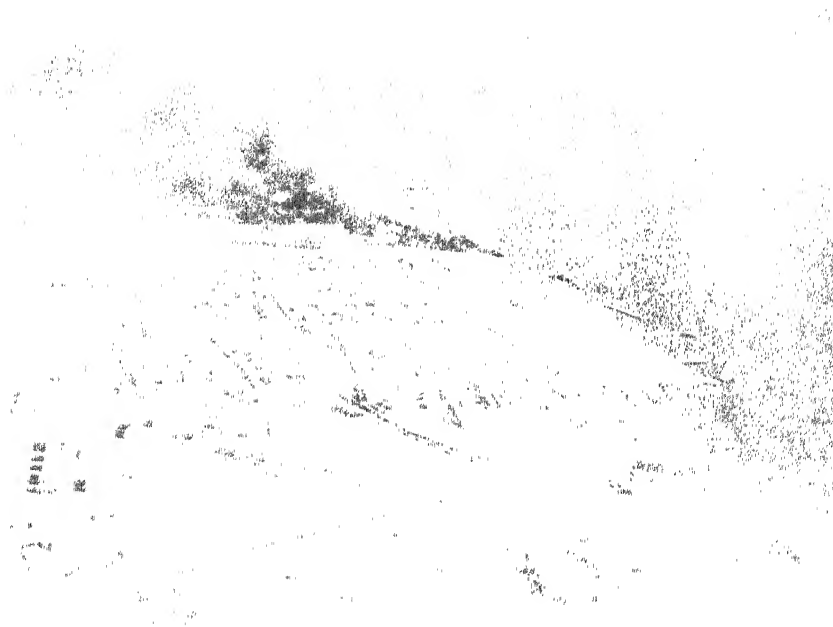


Italian prisoners trekking east.

Alfred Chapin







Tobruk - a petrol fire after bombing

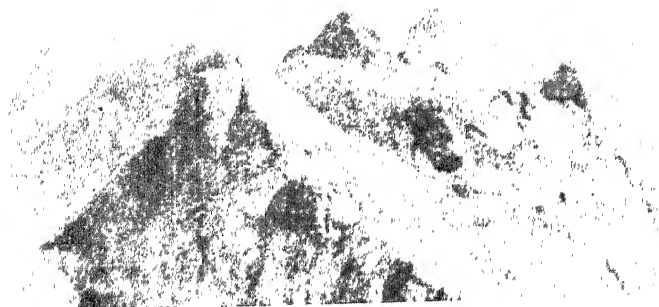
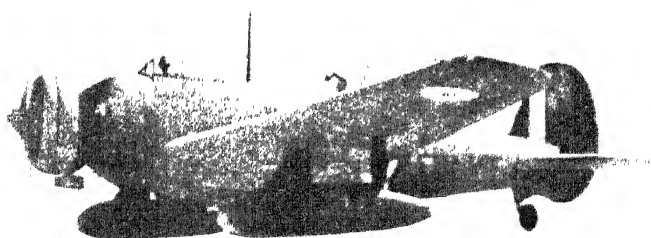
Charles G. Thompson



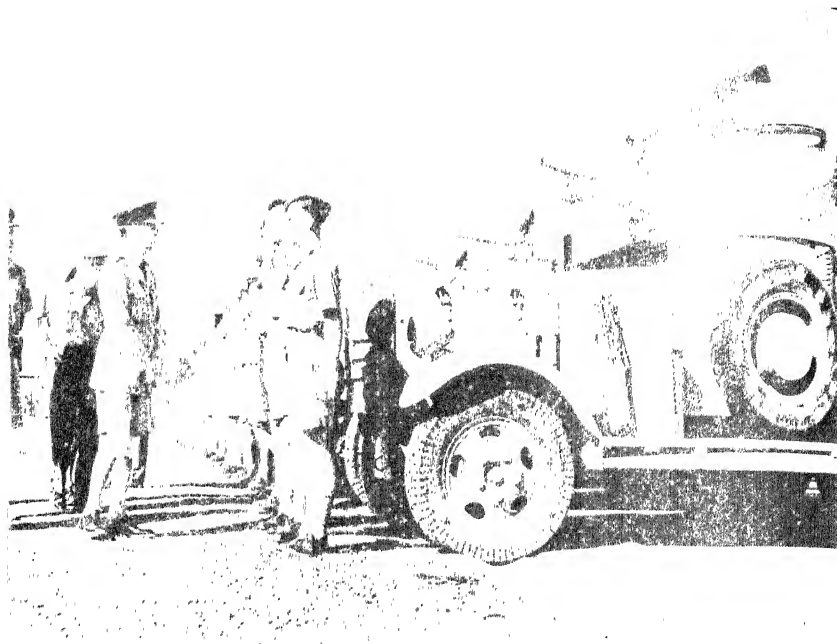
Tobruk, Italian cruiser *San Giustino* already aground - is bombed again.



A Small (1000 lbs.) aircraft.



A Small (1000 lbs.) aircraft.



No. 2 R.A.F. Armoured Car Company.

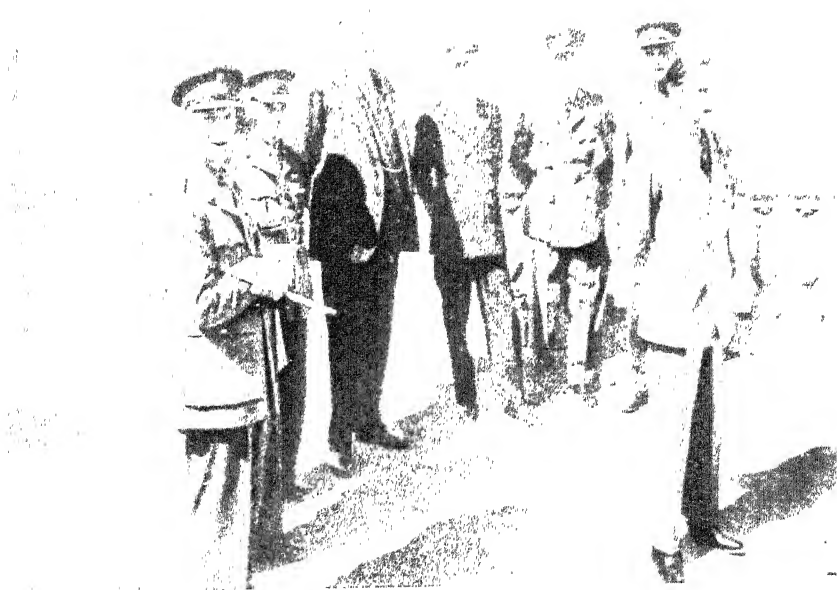
(Caption Copyright 1917)



Flying, maintenance and living under difficulties



General de Groot (left) and Sir Edward Strickland (right).

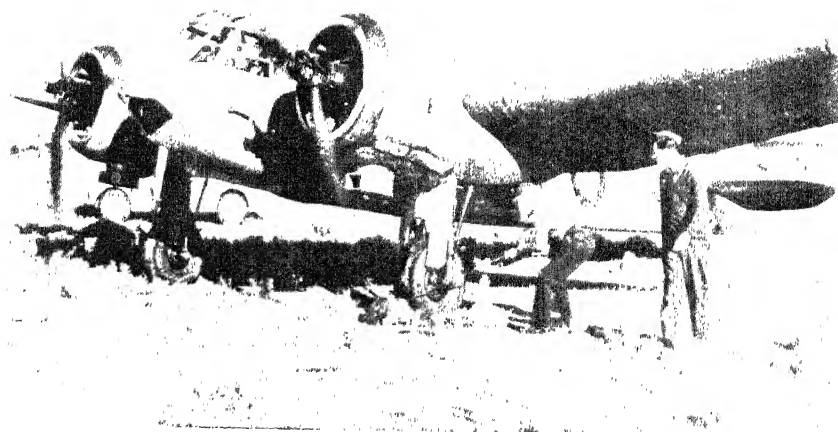


In the Embassy garden, Charles Fitzgibbon (left), Mr. St. John (center), Mr. Cunningham (right), and Mr. St. John (far right).



A Conference in Athens. Mar. Gen. Gambier Parry, Gen. Metaxas, the King of Greece, An. Gen. Dille,
Gen. Papagos.

Copyright 1940 by the U.S. Navy




$$^{\circ} \text{C.} \quad \text{Time, min.} \quad \text{Time, min.} \quad \text{Time, min.} \quad \text{Time, min.} \quad \text{Time, min.}$$

16. 1942. 1943. 1944. 1945. 1946. 1947. 1948. 1949. 1950. 1951. 1952. 1953. 1954. 1955. 1956. 1957. 1958. 1959. 1960. 1961. 1962. 1963. 1964. 1965. 1966. 1967. 1968. 1969. 1970. 1971. 1972. 1973. 1974. 1975. 1976. 1977. 1978. 1979. 1980. 1981. 1982. 1983. 1984. 1985. 1986. 1987. 1988. 1989. 1990. 1991. 1992. 1993. 1994. 1995. 1996. 1997. 1998. 1999. 2000. 2001. 2002. 2003. 2004. 2005. 2006. 2007. 2008. 2009. 2010. 2011. 2012. 2013. 2014. 2015. 2016. 2017. 2018. 2019. 2020. 2021. 2022. 2023. 2024. 2025. 2026. 2027. 2028. 2029. 2030. 2031. 2032. 2033. 2034. 2035. 2036. 2037. 2038. 2039. 2040. 2041. 2042. 2043. 2044. 2045. 2046. 2047. 2048. 2049. 2050. 2051. 2052. 2053. 2054. 2055. 2056. 2057. 2058. 2059. 2060. 2061. 2062. 2063. 2064. 2065. 2066. 2067. 2068. 2069. 2070. 2071. 2072. 2073. 2074. 2075. 2076. 2077. 2078. 2079. 2080. 2081. 2082. 2083. 2084. 2085. 2086. 2087. 2088. 2089. 2090. 2091. 2092. 2093. 2094. 2095. 2096. 2097. 2098. 2099. 2100. 2101. 2102. 2103. 2104. 2105. 2106. 2107. 2108. 2109. 2110. 2111. 2112. 2113. 2114. 2115. 2116. 2117. 2118. 2119. 2120. 2121. 2122. 2123. 2124. 2125. 2126. 2127. 2128. 2129. 2130. 2131. 2132. 2133. 2134. 2135. 2136. 2137. 2138. 2139. 2140. 2141. 2142. 2143. 2144. 2145. 2146. 2147. 2148. 2149. 2150. 2151. 2152. 2153. 2154. 2155. 2156. 2157. 2158. 2159. 2160. 2161. 2162. 2163. 2164. 2165. 2166. 2167. 2168. 2169. 2170. 2171. 2172. 2173. 2174. 2175. 2176. 2177. 2178. 2179. 2180. 2181. 2182. 2183. 2184. 2185. 2186. 2187. 2188. 2189. 2190. 2191. 2192. 2193. 2194. 2195. 2196. 2197. 2198. 2199. 2200. 2201. 2202. 2203. 2204. 2205. 2206. 2207. 2208. 2209. 2210. 2211. 2212. 2213. 2214. 2215. 2216. 2217. 2218. 2219. 2220. 2221. 2222. 2223. 2224. 2225. 2226. 2227. 2228. 2229. 2230. 2231. 2232. 2233. 2234. 2235. 2236. 2237. 2238. 2239. 2240. 2241. 2242. 2243. 2244. 2245. 2246. 2247. 2248. 2249. 2250. 2251. 2252. 2253. 2254. 2255. 2256. 2257. 2258. 2259. 2260. 2261. 2262. 2263. 2264. 2265. 2266. 2267. 2268. 2269. 2270. 2271. 2272. 2273. 2274. 2275. 2276. 2277. 2278. 2279. 2280. 2281. 2282. 2283. 2284. 2285. 2286. 2287. 2288. 2289. 2290. 2291. 2292. 2293. 2294. 2295. 2296. 2297. 2298. 2299. 2300. 2301. 2302. 2303. 2304. 2305. 2306. 2307. 2308. 2309. 2310. 2311. 2312. 2313. 2314. 2315. 2316. 2317. 2318. 2319. 2320. 2321. 2322. 2323. 2324. 2325. 2326. 2327. 2328. 2329. 2330. 2331. 2332. 2333. 2334. 2335. 2336. 2337. 2338. 2339. 2340. 2341. 2342. 2343. 2344. 2345. 2346. 2347. 2348. 2349. 2350. 2351. 2352. 2353. 2354. 2355. 2356. 2357. 2358. 2359. 2360. 2361. 2362. 2363. 2364. 2365. 2366. 2367. 2368. 2369. 2370. 2371. 2372. 2373. 2374. 2375. 2376. 2377. 2378. 2379. 2380. 2381. 2382. 2383. 2384. 2385. 2386. 2387. 2388. 2389. 2390. 2391. 2392. 2393. 2394. 2395. 2396. 2397. 2398. 2399. 2400. 2401. 2402. 2403. 2404. 2405. 2406. 2407. 2408. 2409. 2410. 2411. 2412. 2413. 2414. 2415. 2416. 2417. 2418. 2419. 2420. 2421. 2422. 2423. 2424. 2425. 2426. 2427. 2428. 2429. 2430. 2431. 2432. 2433. 2434. 2435. 2436. 2437. 2438. 2439. 2440. 2441. 2442. 2443. 2444. 2445. 2446. 2447. 2448. 2449. 2450. 2451. 2452. 2453. 2454. 2455. 2456. 2457. 2458. 2459. 2460. 2461. 2462. 2463. 2464. 2465. 2466. 2467. 2468. 2469. 2470. 2471. 2472. 2473. 2474. 2475. 2476. 2477. 2478. 2479. 2480. 2481. 2482. 2483. 2484. 2485. 2486. 2487. 2488. 2489. 2490. 2491. 2492. 2493. 2494. 2495. 2496. 2497. 2498. 2499. 2500. 2501. 2502. 2503. 2504. 2505. 2506. 2507. 2508. 2509. 2510. 2511. 2512. 2513. 2514. 2515. 2516. 2517. 2518. 2519. 2520. 2521. 2522. 2523. 2524. 2525. 2526. 2527. 2528. 2529. 2530. 2531. 2532. 2533. 2534. 2535. 2536. 2537. 2538. 2539. 2540. 2541. 2542. 2543. 2544. 2545. 2546. 2547. 2548. 2549. 2550. 2551. 2552. 2553. 2554. 2555. 2556. 2557. 2558. 2559. 2560. 2561. 2562. 2563. 2564. 2565. 2566. 2567. 2568. 2569. 2570. 2571. 2572. 2573. 2574. 2575. 2576. 2577. 2578. 2579. 2580. 2581. 2582. 2583. 2584. 2585. 2586. 2587. 2588. 2589. 2590. 2591. 2592. 2593. 2594. 2595. 2596. 2597. 2598. 2599. 2600. 2601. 2602. 2603. 2604. 2605. 2606. 2607. 2608. 2609. 2610. 2611. 2612. 2613. 2614. 2615. 2616. 2617. 2618. 2619. 2620. 2621. 2622. 2623



December 1945. The de Havilland Vampire, speed 500-550 mph. Rising from Hill St. Q. 127.
Opp. to Hill St. Q. 127 is E. B. 127.

